K2200 Series

Security Systems

EN | User Guide
Readykey Controllers

BOSCH

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1.0 Introduction

1.1 Manual Organization

This manual is divided into seven sections with an appendix. A summary of each section and appendix is detailed in the table below.

Table 1: K2200 Series User Guide Organization

Section	Description
1	Introduction
2	System Overview – Basic overview of the K2200 Series.
3	Administrating the System – Information and procedures on administrating a K2200 Series system.
4	Key Administration and Access Control – Covers administration of the personnel database, including adding/deleting keys and specifying Access Control functions.
5	Displays, Alarms and Printing - describes the various displays and also covers the printing options which are available
6	Installer Commands - describes the commands used to configure the door controller.
7	Troubleshooting – Common solutions and procedures to rectify troubleshooting con
Appendix A	Transactions - shows all the transactions generated by the door controllers

1.2 Other Literature Referenced

Throughout this manual, references will be made to other documentation. See the following table for a more complete and detailed description of the K2200 Series Controllers.

Table 2: Other Literature Referenced

Name of Document	Part Number Bosch/ Radionics	Part Number PAC
Readykey K2200 Series Controller Installation Guide	46513	17375

1.3 Documentation Conventions

These conventions are intended to call out important features, items, notes, cautions, and warnings that the reader should be aware of in reading this document.

1.3.1 Type Styles Used in this Manual

To help identify important items in the text, the following type styles are used:

Table 3: Type Styles Used in Manual

Bold Text	Usually indicates selections that you may use while programming your panel. May also indicate an important fact that you should note.
Bold Italicized Text	Denotes notes, cautions and/or warnings.
Italicized Text	Refers you to a drawing, table, or other section of this document, or to another document. Also used to symbolize names for records that you will create.
`Courier Text`	Indicates what may appear on the command center/keypad, or internal printer.
[CAPITALIZED TEXT]	Indicates a specific key on the device to be pressed.
On-Screen Buttons	Indicates a specific button that appears on screen
File → New	This is used to describe the path in getting to a specific sub-menu or command in a Windows-based application. Example: …select File•New to create a new

1.3.2 Tips, Important Notes, Cautions and Warnings

Throughout this document, helpful tips, important notes, cautions and warnings will be presented for the reader to keep in mind. These appear different from the rest of the text as follows;

Important Notes - should be heeded for successful operation and programming. Also tips and shortcuts may be included here.

Caution - These caution the operator that physical damage to the program and/or equipment may occur.

Warning - These warn of the possibility of physical damage to the operator, program and/or equipment.

1.4 Abbreviations Used

The following list of abbreviations are used throughout this manual.

AC	Access Code
AEM	Alarm Event Manager
AVR	Automatic Vehicle Recognition
BAT	Battery
CH	Channel
CLK	Clock
CMD	Command
CNC	Central Network Controller
COM	Common
CTS	Clear To Send
D/C	Door Controller
DC	Door Contact
DL	Down Load
DOS	Disk Operating System
DTR	Delay Transmit/Receive
DR	Door
EMF	Electro-Motive Force
FIFO	First In First Out
GND	Ground
HBC	High Breaking Capacity
ID	Identity
IP	Input or Internet Protocol
LED	Light Emitting Diode
LK	Lock
LRT	Lock Release Time
MOV	Metal Oxide Varistor
MS	Alarm Module Sensors
MS-DOS	Microsoft Disk Operating System
OVRD	Override
PAL	Primary Access Level
PB	Pass Back
PB-TIM	Pass Back Timeout
PBC	Pass Back Controller
PC	Personnel Computer
PIN	Personal Identity Number
PINTP	PIN Reader Time Profile
RDR	Reader
RTE	Request To Exit
RTS	Request To Send
RX	Receive
SIG	Signal
TAMP	Tamper
TP	Time Profile
TX	Transmit
VCA	Valid Code Accepted

1.5 Listings and Approval

1.5.1 FCC Notice

This equipment generates and uses radio frequency energy. If not installed and used in accordance with the manufacturer's instructions, it may cause interference to radio and television reception. It has been tested and found to comply with the specifications Subpart F of Part 15 of FCC rules for Field Disturbance Sensors. If this equipment causes interference to radio or television reception - which can be determined by turning the equipment on and off - the installer is encouraged to correct the interference by one or more of the following measures:

- Reorient the antenna of the radio/television,
- Connect the AC power cord to a different outlet so the control panel and radio/television are on different branch circuits,
- Relocate the control panel with respect to the radio/television.

If necessary, the installer should consult an experienced radio/television technician for additional suggestions, or send for the "Interference Handbook" prepared by the Federal Communications Commission. This booklet is available from the

U.S. Government Printing Office,
Washington D.C. 20402,
stock no. 004-000-00450-7.

FCC Registration Number: IDHM32Y6K2000

1.5.2 UL Listing

UL 294 - Access Control System Units

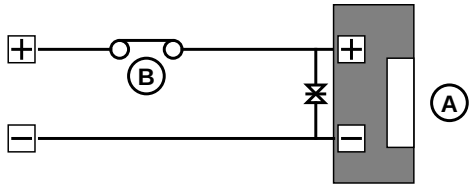
When installing the K2200 series controllers the following should be noted:

1.5.3 HEALTH AND SAFETY

It must also comply with any local Fire, Health and Safety regulations. A secured door that may be part of an escape route from an area must be installed with:

- A fail-safe lock (A). So that the door will be released if the power fails. Ideally a magnetic lock should be used as these are less likely to jam or seize.
- A normally-closed break-glass or manual pull (B) in the lock supply wiring. So that in an emergency the fail-safe lock can be immediately powered down.

Figure 1: Failsafe Lock Wiring



- The controller must be grounded.
- Disconnect both ac and battery power supply before working on the controller.

1.5.4 CABLING

The cabling used in the Readykey access control systems (six wire bus, reader cables, etc.) are not prone to electrical interference. However, you should avoid routing cable close to heavy load switching cables and equipment. If this is unavoidable, cross the cable at right angles every 3.3 to 6.6 ft (1 to 2 m) to reduce the interference.

2.0 System Overview

This section briefly describes how a Readykey Access Control System works and covers the basic system components:

- Readers.
- Door controllers.
- Administration system.
- Connecting door controllers to make a basic access system.

2.1 Specifications

This section details the system specification for a standalone system.

Table 4: K2200 Series Specifications

Access Points	16 One master 4-door Readykey K2200 or 2-door Readykey K1200 controlling up to three slaves, a slave may be 4-door Readykey K2200 or 2-door Readykey K1200 controller.
Personnel	4000
Editor Keys	Master key plus 32 editor keys, each with optional password and editor level.
Access Codes	128, comprising two access levels, each with a time profile.
Access Levels	128
Time Profiles	128, each comprising 3 time periods (max. 32 time periods).
Holiday Profiles	24, each comprising 20 holiday periods (max. 254 holiday periods).
System Holidays	20, for controlling access on public holidays.
Transactions	2500 most recent transactions stored in non-volatile memory.
Zone Alarms	128, up to 32 per door controller using alarm modules.
Relay Outputs	4 on each door controller, plus 8 on each alarm module. These may be controlled by time profile or system event.
Alarms	Unauthorized access, anti-tamper (on reader, alarm module and door controller), door override, zone, PIN reader duress.
Warning	Door left open
Printer Output	Continuous printing of system events. 9 different reports available on demand.

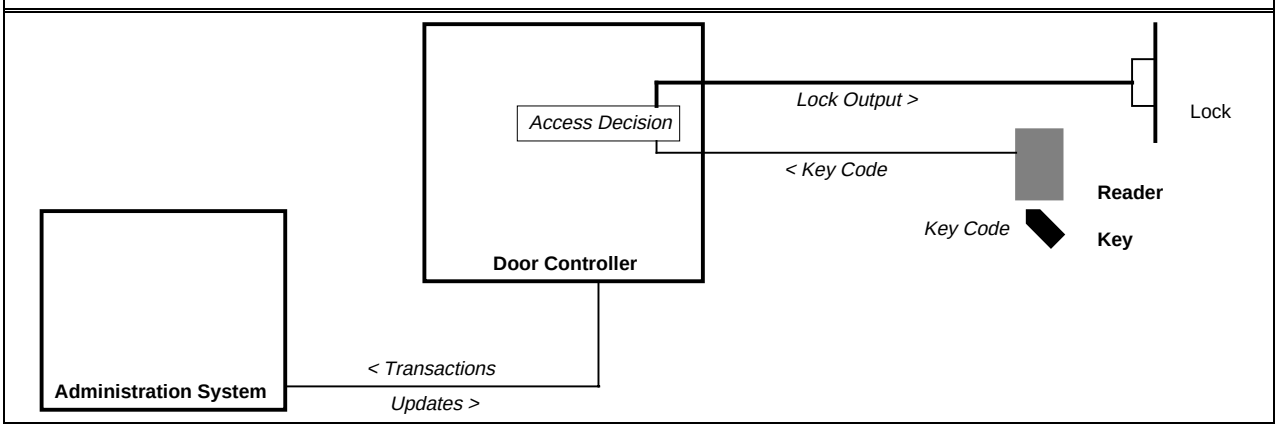
2.2 How the System Works

Any Readykey access control system consists of three components: readers, door controllers and an administration system.

The readers will detect the unique code in a key and pass it directly to the door controller. The door controller compares the code to the information stored in its memory and, if the key is valid, will operate the lock and send a report to the administration system. The administration system is the means by which the user programs the system (who is allowed where and when, etc.) and also where events are reported.

In the case of the Readykey K2200 and Readykey K1200, the administration system is built in to the door controller and uses the keypad, display and reader on the front panel. As an option a printer can be connected to the system that reports events as they happen, and can also produce listings of personnel, system setup, past events, etc.

Figure 2: Components of a Readykey Access Control System



2.2.1 Readers

A reader is a device, usually mounted close to the door, that detects the unique code in a key or card and passes it to the door controller where the access decision is made. There are several types of reader suitable for different purposes and environments. Below are some of the special types of reading devices.

Request to Exit Switch

Sometimes a reader is used on both sides of a door, controlling both entry and exit from an area. Normally, however, a Request to Exit motion or button is used to open a door from the secure side. This switch, mounted close to the door, when pressed sends a signal to the door controller to release the lock. Of course, anyone can press the switch to open the door when leaving, therefore no identity of the person can be recorded.

2.2.2 Door Controllers

The door controller is the heart of the access control system; its main functions are to:

- Decide whether a person has access at a particular door and at a particular time.
- Provide power to operate the lock.
- Monitor doors for unauthorized access or left open conditions.
- Automatically lock and unlock doors at certain times.
- Detect tamper conditions at the reader or at the controller.
- Monitor any alarm modules for extra alarm inputs.
- Operate relays on the door controller itself or on an alarm module.

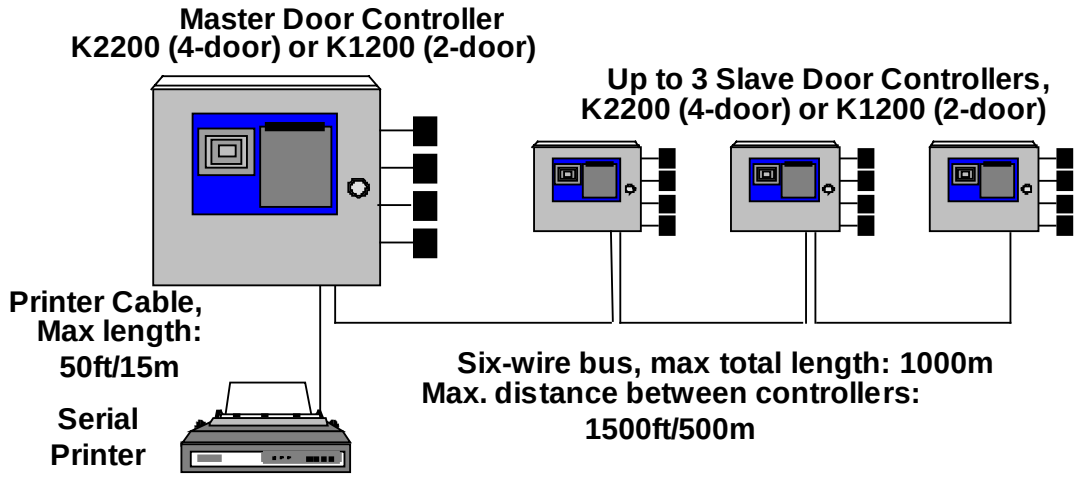
The Readykey K2200 may have 4 readers connected, the Readykey K1200 may have 2 readers connected. In all other respects, both door controllers are identical.

Connecting Door Controllers

What makes these door controllers so flexible is the ability to link controllers together to allow more than 4 doors to be administered. When programmed from the front panel, as described in this document, up to 16 doors can be controlled and up to 4000 personnel administered.

In all cases, one Readykey K2200 Series Door Controller (e.g. K2200 or K1200) is the master controller, up to 3 further door controllers are slaves. All administration and reporting occurs at the master controller. Apart from some initial set up functions, no administration activity occurs at the slave controllers.

Figure 3: Connecting Door Controllers



Alarm Modules

An alarm module is a Readykey Alarm Module or Alarm Event Manager (AEM). Alarm modules are optional devices that allow extra inputs (points or zones) to be monitored and report alarms if activated. Each alarm module has 8 inputs that can be enabled and disabled manually or automatically at certain times.

The alarm modules also have 8 relay outputs that can be activated by alarm inputs, system events such as door left open, or at certain times.

2.2.1 Administration Software

There are several ways of administering an access control system. Different methods allow greater numbers of doors or personnel to be controlled, and door controllers to be a greater distance from the central point. The administration systems fall into two broad categories:

1. Faceplate panel administration. This is covered by this document and is used for small systems (up to 16 doors) and, as the name suggests, all the programming is via the faceplate panel attached to the controller.
2. Readykey for Windows. This is a PC-based administration system used for larger systems, or where more reporting features are required. For further details, refer to the *Readykey for Windows Manual* for further details.

Note:

At least one faceplate is required for each system

3.0 Administering the System

This section looks at the controller is administered when used as part of a standalone system. It covers:

- What **Editor** mode is and how to administer the editor keys needed to access the Editor.
- Using the Editor. This section describes how to use the **Editor** mode to administer the system

Note:

If the system has been commissioned and all editor keys added to the system, you can go straight to Section 3.1.3

3.1 Using the Faceplate

3.1.1 Editor Mode

The faceplate is used for system administration. The faceplate is the keypad, display and reader attached to the door controller to administer keys, respond to alarms and configure the system. Up to 16 doors and 4000 keyholders can be administered using this system. An optional, and highly recommended, printer may be used for both continuous printing of events and production of various reports.

Note:

For larger systems, it is recommended to be administered from the Readykey for Windows program.

Each system, whether administered from the faceplate or a PC, needs at least one faceplate for basic system administration - see Readykey K2200 Series Controller Installation Guide (Bosch P/N: 46513, BOSCH P/N: 17375).

3.1.2 Editor Key Administration

In order to use the Editor mode to make changes to the system, you need an editor key. This is a normal credential that is recognized by the door controller as allowing the holder to modify data held in the controller. Up to 32 editor keys may be added, each may have a different editor level. The editor level determines what commands that particular key can operate. In addition, each editor key may be given its own password. The master key is a special editor key that can be used to issue all commands and is the only key able to create or modify other editor keys.

Note:

All editor keys, including the master, are normal Readykey keys that can be used for gaining access. However, in order to be used for access control they still have to be added to the personnel list and given an access code. Likewise, removing an editor key will not have any effect on its use as normal access key. The exception to this is the master programming key.

Editor Keys

Up to 32 editor keys can be assigned, each one with its own individual password and editor level. Only the master key can add, delete and modify the use of the editor keys.

Note:

All editor keys, including the master, are normal Readykey keys that can be used for gaining access. However, in order to be used for access control they still have to be added to the personnel list and given an access code. Likewise, removing an editor key will not have any effect on its use as normal access key. The exception to this is the master programming key.

Alarm Acceptance

All editor keys are able to accept alarms either at the master or slave controllers (if used), whatever their editor level. For instance, a key with an editor level of 0 will **only** be able to accept alarms and be unable to issue any commands in the Editor.

Master Key

The master key is created when the system is installed and configured. It can be changed by using the **INST** command - a command for which the master key is required.

If the master key is lost, a replacement can be programmed, but only by performing a reset. This procedure is described in *Readykey K2200 Series Controller Installation Guide (Bosch P/N: 46513, BOSCH P/N: 17375)*. No data will be lost by this process, but it can only be carried out by someone with access to the inside of the master door controller housing.

Editor Keys

Up to 32 editor keys can be assigned, each one with its own individual password and editor level. Only the master key can add, delete and modify the use of the editor keys.

Passwords

All editor keys can have a password assigned. This prevents anyone has possession of an editor key gaining access unless they also know its password. Passwords can only be issued to editor keys, or altered, by the holder of the master key (using the **I** command).

Editor Levels

The ability of any editor key to issue commands is determined by the editor level it is assigned. The editor level is a numeric value, between 0 and 4095, calculated from the following table. Each action is given a value, by adding the values for each action to be assigned an editor level is obtained. Some typical examples are given.

Table 5: Editor Level Assignments

Value	Command	Actions
0	none	Accept alarms only
1	P1-P9(exc P6) HE, K	Printer functions
2	L	Manual lock and unlock
4	AC, AL E	Access codes and access levels Edit personnel
8	D	Set door data
16	T, PR	Time profile functions
32	C	Change date and time
64	V	Void (delete) a personnel key
128	A N	Add a personnel key View a PIN
256	MR, MS, RE	Alarm module programming
512	DC	Passback and door interlock
1024	HR, HP	Holiday functions
2048	DP	Data protection

Editor Level Examples

This table gives some examples of how to calculate editor levels. The names used refer to typical types of operator or user.

Note:

The Installer cannot add or delete personnel, or the Administrator modify door programming

Table 6: Editor Level Calculations

Value	Commands	Supervisor	Administrator	Installer
0	none	Yes	Yes	Yes
1	P1-P9,HE, K	Yes	Yes	
2	L	Yes	Yes	Yes
4	AC, AL, E	Yes	Yes	
8	D	Yes		Yes
16	T, PR	Yes	Yes	Yes
32	C	Yes	Yes	Yes
64	V	Yes	Yes	
128	A,N	Yes	Yes	
256	MR, MS, RE	Yes		Yes
512	DC	Yes		Yes
1024	HR, HP	Yes	Yes	Yes
2048	DP	Yes		
	Total	4095	1271	1850

Master Key Commands

The following commands can only be issued when the master key is used:

Table 7: Master Key Commands

Command	Actions
I	Administer editor keys
INST	Installer functions
P6	Print set up details
INIT, INITn	Initialize a door controller
DL	Download to door controllers
SYSTEM START	Initialize a door controller

The **INST** and **SYSTEM START** commands are fully described in *Readykey Series Controllers Installation Manual* (*Bosch* P/N: 46513, PAC P/N: 17235), the **P6** command is described in the Section 5.5.3.6, the **INIT**, **DL**, and **UL** commands are described in *Installer Functions.*

Assigning Editor Commands – The I Command

Up to 32 editor keys can be assigned. Editor keys are maintained by modifying a database using the **I** command. Before adding each key, you should first determine the editor level that key will be assigned, see *Editor Keys.*

Adding, Modifying or Deleting an Editor Key

Note:

Only the master key is able to issue the I command.

1. Present the master key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [I] and press [ENT].

```
CMD I_
```

5. The display will now show the first unassigned editor. An unassigned editor key is one with a key code of 00000000.

```
E3 KEY 00000000
```

6. To add a new editor key, present a key to the faceplate reader.

   If the key is already assigned, a REPEATED KEY message is displayed for about 2 seconds

```
REPEATED KEY
```

   If the key is valid, its 8-character code will appear.

```
E3 KEY 8824A474
```

7. Press [NXT] to go to the Editor Level Field.
8. To modify an existing editor key:

   At the KEY prompt,

```
E3 KEY 00000000
```

   you can either use the up and down arrow keys to select a key, or press the FastFind button (*).

   - If you are in possession of the key itself, present the key to the faceplate reader.
     - If the key is not in the database, you will get a message (left) for about 2 seconds before returning to the ID prompt.

```
NOT IN DATABASE
```

   - Type the editor key number (1-32) and press [ENT].

   You can now change the key, if required, by presenting a new key to the faceplate reader.

   Press [NXT] to go to the Editor Level field.
9. To delete an editor key.

   Select the key to delete as described above.

   When the key code is displayed,

```
E9 KEY 28851408
```

   press [CLR] - the key code will be replaced with zeroes.

```
E9 KEY 00000000
```

   Press the [ENT] key.

   Press **[ESC]** to return to the CMD prompt.
10. Enter the editor level to be assigned to the key, (see *Editor Keys* for editor level values).

```
E3    LEVEL 0
```

    The value must be between 0 and 4095. 0 means the key can only accept alarms, 4095 gives access to all but the master key only commands.

    Press the [ENT] key.

    Press [NXT] to go to the next field.
11. The name you enter here will appear on printed reports of editor use and alarm acceptance when this editor key is used.

```
ID
```

    Type a name of up to 12 characters (A-Z, 0-9 and SPC). Press **[ENT]**.

    Press [NXT] to go to the next field.
12. Whatever method you use to find a key you will be presented with the ID number and access code.

```
ID 27    AC 0
```

Note:

If you use 12-character IDs, press NXT to view the name assigned to the key (left).

```
WHO SMITH AB
```

At this point you can use the up and down arrow keys to move through the database to find the key you want to edit.

You can also press the FastFind button (*) to return to the ID prompt.

3.1.3 Using Editor Mode

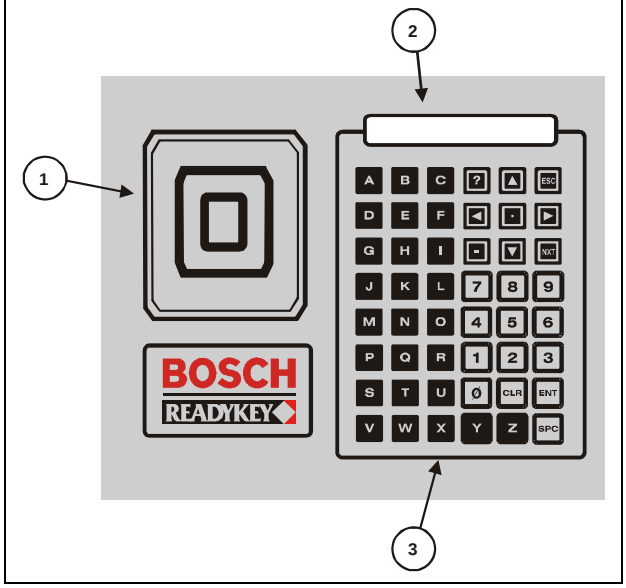
New Users

Please read this section if you are unfamiliar with programming a door controller. It contains important information that will help you understand how the **Editor** mode works, what the different keys do, and how to make changes to different items. By reading this section you will find it easier to follow the more detailed descriptions of commands in later sections.

All programming of the access control system are made using the Editor mode. The Editor mode consists of a set of commands issued by the user. Each command allows the user to enter or modify various items, depending on the command. To gain access to the Editor mode and issue commands, present an editor key to the reader on the faceplate.

A full description of editor keys, editor levels, passwords and administration is given in see *Section 3.1.2 Editor Key Administration.*

Figure 4: K2200 Faceplate



1 - Reader

2 - 16 Character Display

3 - 48 Key Keypad

3.1.4 Entering Editor Mode

Present the editor key to the faceplate reader. If the key is a valid editor key or the master key:

- You may be prompted to enter a password,

  ```
  PASSWD _
  ```

  In which case, use the keypad to enter the password (maximum 8 characters) and press **[ENT]**. If the password is valid, you will see the CMD prompt - see *Section 3.1.5 Command Prompt - CMD.*

  If the password you enter is not valid, you will get:

  ```
  INVALID PASSWORD
  ```

  and be returned to a blank screen. Present the key and try again. If it still does not work, ask the person responsible for the system to check your password.

- If no password has been assigned to the key, you will immediately have the CMD prompt - see *Section 3.1.5 Command Prompt - CMD.*

Note:

If the key you present is not an editor key, you will see

```
T
```

This indicates that a key has been presented, but is not recognized as an editor key.

Note:

No alarm conditions will be reported while you are in Editor mode, nor will any transactions be printed. When you leave Editor mode, any alarms that occurred will be reported and all the transactions will be printed. Door controller or alarm module relays will operate during Editor mode.

3.1.5 Command Prompt - CMD

The starting point for any operation within the **Editor** mode is the CMD prompt:

```
CMD _
```

Here you are being prompted to enter one of the commands that either alters the information stored in the door controller, such as adding or deleting personnel, or initiates an action, such as a manual unlock.

Editor Levels

The commands you can perform are determined by your editor level. This is set by the person responsible for issuing editor keys. If you try to enter a command that is not available to you, you will see:

```
INVALID ID LEVEL
```

and be returned to the CMD prompt.

Editor Time Out

Once in **Editor** mode, if you do not press any keys for more than 3 minutes, the mode will time-out. You will then have to present your editor key again to return to the **Editor** mode. This means you cannot inadvertently walk away from the system leaving it in the **Editor** mode.

3.1.6 Leaving Editor Mode

Once you are in the **Editor** mode, you can press the [ESC] key at the CMD prompt to leave and return the door controller to its normal operation. Any alarm conditions that occurred while you were in the **Editor** mode will now be reported. Also, if you have a printer connected, any transactions that have occurred while the **Editor** mode was being used will now be printed.

3.1.7 Panel Keyboard

In the **Editor** mode the **?** key provides extra help. For instance, at the CMD prompt, if you press **?** you will see:

```
ENTER COMMAND
```

This display lasts about 3 seconds before returning to the CMD prompt or the prompt at which you pressed the key. You should press [?] at any time if you are not sure what is required.

ESC Key

The **[ESC]** key is used to leave the current operation and go back to the previous step. For instance, pressing **[ESC]** while editing data will take you back to the CMD prompt.

Navigation Keys

Moving within a database

Most commands allow you to edit a database, or table. Each database has several rows, or **records**, consisting of several columns, or **fields**. When you first issue a command, you will be placed in the first field of the first record or, if you prefer, the top left-hand corner of the table. You use the navigation keys on the keyboard to move this 'window' around the table.

Table 8: Navigation Keys

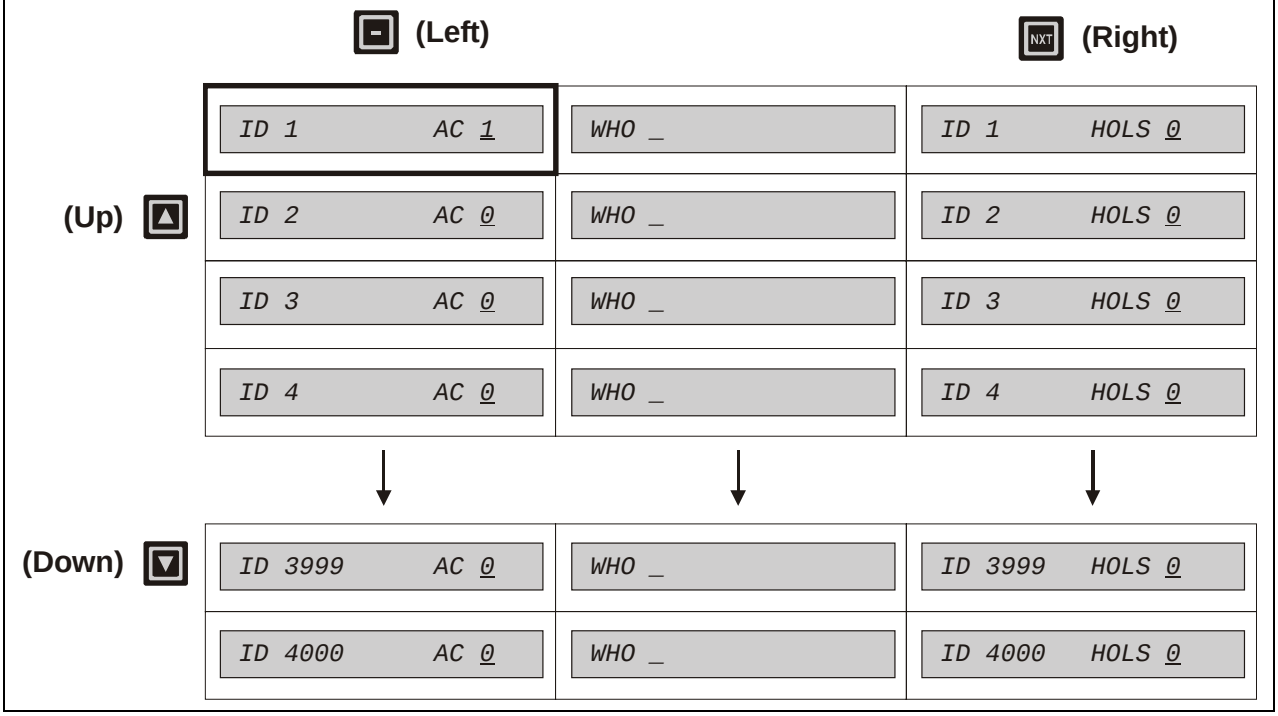
Key	Name	Description
	Up and Down Arrow Keys	Use the up and down keys to move from one record to another. Usually there will be an indication of which record you are in; however, some fields may not have room to display a record number as well as their value. When you are on record 1, the up arrow will have no action; on the last record, the number will vary from one database to another, the down arrow will have no action.
	Minus and Next Keys	Use the minus and Next keys to move from field to field across a record. When you are on the leftmost field the minus key has no action; on the rightmost field, the [NXT] key has no action. If you move up or down using the arrow keys, you remain in the same field but move to the record above or below.

	FastFind	The dot on the center of the arrow keys is the **FastFind** button. In most commands, if you press this you will receive the prompt
		`FIND _`
		Here you can enter a record number and press [ENT], to move directly to that record. If you enter a number larger than the number of records, you will go to the last record in the database.
		The Void Personnel (V) and Edit Personnel (E) commands give the prompt:
		`ID _`
		In this case, you have three choices for searching:
		1. Enter the record number and press [ENT].
		2. Type the exact 12-character ID (if used) and press [ENT]
		If the ID is not known, you will get the message:
		`UNKNOWN NAME`
		and be returned to the ID prompt.
		3. Present a key to the faceplate reader.
		If the key is not known you will get the message:
		`NOT IN DATABASE`
		and be returned to the ID prompt.
		FastFind in printer commands. In the printer commands (P1-P9), the FastFind button is used to initiate printing. see *Section 5.5.1 Print Report – The P1 to P9 Commands*.

Editor Example

The following example (see *Figure 5*) shows the **Personnel** database as seen when the **Edit** (**E**) command is used. The highlighted box shows the first item that will appear in the screen. Use the keys shown to move the 'window' around the database. Use the **FastFind** button (•) to go directly to a particular record.

Figure 5: Editor Example



Alphanumeric Keys

These are the keys [A]-[Z], [0]-[9] and **[SPC]**, which take up most of the keyboard. You use these for entering names or values when prompted. Normally you will not be allowed to enter characters ([A]-[Z] or **[SPC]**) when a numeric value, such as an access code or lock release time is required.

> When you enter any name or value, you should always press [ENT] before moving on to the next prompt. If you do not press [ENT], the name or value you entered will be lost and the contents of the field will revert to their previous value

Making Changes

When a field is visible on the screen, the flashing underline cursor will appear on the first character. The cursor is always positioned on the next character to be changed. You can use the following keys to move and alter the display (see *Table 9*).

Table 9: Display Altering Keys

Key	Name	Description
◀ ▶	Left and Right Arrows	The left and right arrow keys move the cursor to the left and right within the field. The cursor always starts on the leftmost character of the field and returns to that position when you press ENT
CLR	Clear	The **CLR** (clear) key will blank out the existing value. This is convenient especially when changing long names. If you press **CLR** followed by **ENT**, numeric values will be set to 0 and alphabetic values set to all spaces.

The next example shows how to make changes to items. Most data items fall into 3 different categories:

- Alphanumeric
- Numeric
- Options

Alphanumeric

These are names given to personnel, editors, doors etc. You may use any of the alphanumeric characters (A-Z, 0-9) including SPC (space.)

1. Once you have selected a field to change, use the alphanumeric keys to enter a new value.

```
ID  DOOR   1
```

The cursor, a flashing underline, marks the character that will be overwritten by the next key press.

2. When a valid key is pressed, the new character will appear on the screen and the cursor will move to the next position.

```
ID  FOOR   1
```

3. Continue entering characters, until you have completed the entry.

```
ID  FRONT DOOR_
```

Use the left and right keys to move the cursor within the field. Press [**ENT**]

> You must press [ENT] to save your new entry. If you do not, when you move to the next field or press [ESC], your entry will be lost.

Numeric

These are values or codes such as lock release time, access code, etc. In this case, you can only enter numbers (0-9). Each type of entry will have a maximum and minimum value. If you enter a value outside the range allowed, the value you entered will be adjusted to the nearest allowed, e.g. the maximum value for a lock release time is 255 seconds, if you enter 300, the value will change to 255 when you press [**ENT**].

1. Once you have selected a field to change, use the alphanumeric keys to enter a new value.

```
DR1    LRT  5
```

The cursor, a flashing underline, marks the character that will be overwritten by the next key press.

2. When a valid key is pressed, the new character will appear on the screen and the cursor will move to the next position.

```
DR1    LRT  1°
```

3. Continue entering characters, until you have completed the entry.

```
DR1    LRT  10°
```

Use the left and right keys to move the cursor within the field. Press [**ENT**]

> You must press [ENT] to save your new entry. If you do not, when you move to the next field or press [ESC], your entry will be lost.

Options

These are special fields that allow various options to be set, such as days of the week, etc.

1. No cursor appears in this type of field. In order to make changes, press the number corresponding to the option you wish to change. In this example, time period days (PR command) are shown.

```
F1 DAY --------
```

2. In this example, to select a day press the corresponding number to the day of the week, Mon=1, Tue=2, etc. To deselect an option, press the number again.

```
F1 DAY MTWTF---
```

When you have made your selections, press [ENT].

> You must press [ENT] to save your new entry. If you do not, when you move to the next field or press [ESC], your entry will be lost.

There are other types of entry, such as date, time, manually locking/unlocking doors etc. These will be described in detail in the relevant sections.

4.0 Key Administration/ Access Control

This section deals with the Personnel database and covers the following:

- Adding new keys to the database.
- Deleting keys (voiding) from the database.
- Editing key parameters (access rights etc).
- The use of PIN codes.
- Controlling access - who goes where and when.

Also covered in this section are the following associated topics:

- Manual lock/unlock facility.
- Setting the system date and time.

4.1 Key Administration

Each key that is issued will allow the keyholder access through certain doors at certain times. This section describes how to add, delete (or void), and edit keys.

4.1.1 Personnel Database

Identifying Personnel

There are two ways in which individual keyholders can be identified in the system. The first is to use an automatically generated ID number, between 1 and 4000. The second method allows the operator to assign a name, up to 12 characters, to each keyholder.

Note:

You should decide before you start issuing keys which method you will use. The system has to be set up to use one method or the other by the installer. Although this can be changed later without losing information, it is not recommended.

Four-Digit Number

The main advantage of this method is speed of entry because you will not have to enter a different name for every key that is issued. The disadvantage is that all references within the system, including printed reports, are to the 4-digit number. This can make identification of keyholders difficult, as you will have to keep looking up your own records. You are not able to select the number that is issued, the system will always issue the first free number. For instance, if you issue 120 keys, they will be automatically identified as 0001 to 0120 when added. If you were to delete, say, numbers 25 and 42, the next keys issued would be identified as 0025, 0042 followed by 0121, 0122 and so on.

If you use this method, it is vital that you keep an accurate record of the 4-digit ID issued to each key and to whom the key is issued. If a keyholder loses a key, unless you have an accurate record, you will not be able to delete the lost key from the system.

Twelve Character Name

A better method is to use the 12-character name. This method is easier to administer once all the keys are issued, In this case whenever a key is issued, a unique name can be entered. The name may consist of up to 12 characters using A-Z, 0-9 and space (SPC on the keypad.) Names should not start with a space or a number. You will probably use the keyholder's name and initials, e.g. `SMITH AB` or `JONES SL`. You may use any naming system you feel is appropriate, such as payroll or employee numbers. Remember names **must** be unique - you will be warned if a duplicate name is entered.

Token Code

This is the unique code stored in each Readykey credential. It is written permanently into the key during manufacture and never changes. In routine use, you will not have to use this code. However, there are some occasions on which it can be used. One of these is the adding of keys without physically being in possession of the key. This may come about if one or more keys are accidentally removed from the system and it may not be possible or convenient to recall the lost keys from the keyholders. If a record has been kept of the token codes of all keys, these can be entered instead of presenting the key itself. The personnel printout (**P1** command) contains the token code of each key and is an ideal record for such purposes.

Access Codes

The access that a key is allowed is determined by assigning it an access code. Access codes are fully described in see *Section 4.2.6 Access Codes – The AC Command*. When routinely adding keys, you should know the access code that will need to be assigned to each key.

Please read *Section 4.2 Controlling Access* to understand how access codes work.

Holiday Profiles

Each keyholder can be assigned a holiday profile. This is a range of date on which the person will **not** be allowed access. There are 24 different holiday profiles, each of which may contain up to 20 holiday periods. A holiday period consists of a start date and number of days' duration. There are not enough holiday profiles to give every keyholder their own. For this reason, you are not advised to attempt to control individual access using holiday profiles. However, they may be used to cover periods such as a temporary factory closure.

Holiday periods and profiles are defined using the HR and HP commands (see *Section 4.2.7 Holidays – The HR and HP Commands*) and are applied to a key using the **Edit** (**E**) command (see *Section 4.1.4 Editing Keys – The E Command*).

4.1.2 Adding Keys – The A Command

This procedure describes how to add a key to a database. Before you start you should have or know the following:

- An editor key with an editor level that allows adding of keys
- One or more keys to add
- The names of each keyholder (not required if using 4-digit identification)
- The access code to be assigned to each keyholder

To Add a Key:

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [A] and press [ENT].

   ```
   CMD A_
   ```

5. The next available unused ID number will now appear along with a prompt to enter the access code.

   ```
   ID 27    AC 0
   ```

   Type the access code (0 to 128) and press [ENT].

   Press [NXT] to go on to the next prompt.
6. Enter an identification name for this key which may be a name, a payroll number or a flat/residence name.

   ```
   WHO _
   ```

Note:

This prompt will only appear when you are using 12-character IDs.

You may use any of the characters on the keyboard (A-Z, 0-9, SPC). Do not start a name with a space or a number

If you enter an ID that is already being used, the message `DUPLICATE NAME` will appear for about 2 seconds before returning to the WHO prompt.

```
DUPLICATE NAME
```

Press [NXT] to go on to the next prompt.

7. At this prompt

   ```
   KEY   00000000
   ```

   you can either:

   - Present the key to be added to the faceplate reader. If the key is valid, the addition of this key is complete and you will move directly to a prompt for the next key. There is no need to press [ENT] or [NXT].
   - Type the 8-character key code.

     If for some reason you are not in possession of the key, provided you know its 8-character code, you can enter it here. Use only the characters A-F and 0-9.

     When complete press [ENT].

     If the key is valid, the addition of this key is complete and you will move directly to a prompt for the next key. There is no need to press [NXT].

     If, using either of these two methods, you enter a key that is already stored you will get a message

     ```
     REPEATED KEY
     ```

     for about 2 seconds before returning to the KEY prompt.
8. If you have no more keys to add, press **[ESC]** to return to the CMD prompt.

   If not, you can now continue adding keys

   ```
   ID 28    AC 0
   ```

Note:

The access code remains the same as the previous key you entered. If adding a large number of keys, by grouping them by access code you will speed up entry as well as reducing the risk of error.

Once a key has been added, it will be recognized by all the readers in the system. However, this will not be the case if:

Slave door controllers are disconnected or not communicating with the master.

A download is in progress to a slave door controller, in which case the new information will not reach the slave until completion of the download.

4.1.3 Deleting (Voiding) Keys – The V Command

Removing keys from the system is a very simple process. Several options are available for selecting the key to be removed. They are:

- When prompted, present the key to the faceplate reader.
- Enter the 4-digit ID number.
- Enter the 12-character ID, if used.
- Use the up and down arrow keys to search for the key in the database.

•

Instead of voiding a key from the system, consider changing its access code to 0 (zero). By doing this you will prevent use of the key (any attempt will result in a No Access: Locked Out transaction being generated) but you will also have a record of a 'lost' key being used unsuccessfully

To Void a Key:

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [V] and press [ENT].

   ```
   CMD V_
   ```

5. At the ID Prompt,

   ```
   ID _
   ```

   you can select the key to be deleted using one of these methods:

   - If you are in possession of the key itself, present the key to the faceplate reader.

     If the key is not in the database, you will get a message for about 2 seconds

     ```
     NOT IN DATABASE
     ```

     before returning to the ID prompt.

   - Type the 4-digit ID of the key and press [ENT]. Any number between 1 and 4000 will be accepted.

   - If you are using 12-character IDs, you can type the ID and press [ENT]. You must type the name exactly as it was originally entered. If no match is found, you will get a message

     ```
     UNKNOWN NAME
     ```

     for about 2 seconds before returning to the ID prompt.

6. Whatever method you use to find a key, you will be presented with the ID number and access code.

   ```
   ID 27    AC 7
   ```

7. At this point, you can use the up and down arrow keys to move through the database to find the key you want to delete. You can also press the FastFind (*) button to return to the ID prompt.

   ```
   WHO SMITH AB
   ```

8. Once you have selected the key you want to delete, press [ENT].
9. At the `CONFIRM VOID` prompt,

   ```
   CONFIRM VOID
   ```

   press [Y] to confirm and you will be returned to the `CMD` prompt. Any other key will return you to the `CMD` prompt without voiding the key.

When a key has been voided, it will be rejected by all the readers on the system and a `No Access: Unknown ID` transaction will be produced. This will not be the case if:

- Slave door controllers are disconnected or not communicating with the master.
- A download is in progress to a slave door controller, in which case the new information will not reach the slave until completion of the download.

4.1.4 Editing Keys – The E Command

You can change the access code of a key as well as the 12-character name (if used) at any time. You can also assign a holiday profile to a keyholder. The access code and holiday profile must already be defined (see *Section 4.2.6 Access Codes – The AC Command* and *Section 4.2.7 Holidays – The HR and HP Commands*).

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [E] and press [ENT].

   ```
   CMD E_
   ```

5. At the `ID` prompt,

   ```
   ID _
   ```

   you can either use the up and down arrow keys to select a key, or press the FastFind (*) button.

   - If you are in possession of the key itself, present the key to the faceplate reader.

     If the key is not in the database, you will get a message for about 2 seconds

     ```
     NOT IN DATABASE
     ```

     before returning to the ID prompt.

   - Type the 4-digit ID of the key and press [ENT]. Any number between 1 and 4000 will be accepted.

   - If you are using 12-character IDs, you can type the ID and press [ENT]. You must type the name exactly as it was originally entered. If no match is found, you will get a message

     ```
     UNKNOWN NAME
     ```

     for about 2 seconds before returning to the ID prompt.

6. Whatever method you use to find a key, you will be presented with the ID number and access code.

   ```
   ID 27    AC 7
   ```

7. At this point, you can use the up and down arrow keys to move through the database to find the key you want to delete. You can also press the FastFind (*) button to return to the ID prompt.

```
WHO SMITH AB
```

8. Once you have selected the key you want to edit, press [ENT].
9. You can change the access code by typing the new value and pressing [ENT].

```
ID 27    AC 7
```

   Press [NXT] to go to the next field.
10. If using the 12-character ID only, you can enter a new name. Either type over the existing name or press [CLR] to clear the field before typing a new name.

```
WHO SMITH AB
```

    Press [ENT] when you have finished.

    Press [NXT] to go to the next field.
11. You can enter a holiday profile. Enter a value between 0 and 24 and press ENT.

```
ID 27    HOLS 0
```

12. Either press [ESC] to return to the CMD prompt, or use the up and down arrow keys, or FastFind (*) button to search for another key to edit.

When a key has been edited, the changes to access code and/or holiday profiles will be observed by all the readers in the system. This will not be the case if:

- Slave door controllers are disconnected or not communicating with the master.
- A download is in progress to a slave door controller, in which case the new information will not reach the slave until completion of the download.

4.1.5 PIN Codes – The N Command

You may have a special type of Readykey reader on your system that requires a Personal Identification Number (PIN) to be entered in addition to a key being presented. Readykey PIN readers work by calculating a 4-digit (0000-9999) number from the unique token code embedded in the Readykey key. The keyholder must then enter this PIN code correctly before the key will be allowed access by the door controller.

An additional feature of the door controllers is that they allow a time profile (see *Section 4.2.5 Time Profiles*) to control when a reader requires a PIN with the key or just the key:

- When the time profile is active, the PIN reader operates like a conventional key reader, requiring no PIN.
- When the time profile is inactive, a key plus the PIN is required to gain access.

This feature must be set using the Doors (D) command, although the time profile is set using the Time Profile (T) and Time Periods (PR) commands

PIN Reader Duress

Another feature of the PIN reader is the ability to generate a duress alarm. If a keyholder is being forced to open a door, by adding one to their PIN, the door will open as normal. However, a duress alarm will be reported at the master controller.

Example

If a keyholder has a PIN of 1234 and they enter 1235 (PIN plus 1), the door will open as normal but a duress alarm will be generated. You should add one to the code numerically, e.g. a PIN of 1239 gives 1240 as the duress code.

How to Find a Key's PIN

N Command

To find out the PIN of any Readykey key (it does not have to be in the database):

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.

Note:

The editor key must have an editor level that allows the viewing of PIN codes.

3. You will now see the CMD prompt.
4. Type [N] and press [ENT].

```
CMD N_
```

5. Present a key to the faceplate reader.

```
* PRESENT KEY *
```

6. The 4-digit PIN will be displayed for about 2 seconds.

```
PIN NO IS  1234
```

7. Either present other keys to determine their PIN codes, or press [ESC] to return to the CMD prompt.

4.2 Controlling Access

This section describes how you control the access of individual keyholders. This is achieved by assigning each keyholder an **access code**. This code is created by combining **access levels** (**where** a person has access) and **time profiles** (**when** a person has access).

An additional feature allows you to apply a **holiday profile** to a keyholder. This is a range of dates during which they will be denied access at times their access code would normally allow.

In order to administer the system efficiently, it is essential that you maintain careful records of access codes, access levels, time profiles and time periods. If you do, maintaining the system will be much easier and you will be less likely to make mistakes.

Time profiles, which can be used to control other functions in the system as well as keyholder access, are described in detail in next section.

4.2.1 Access Code Overview

An access code determines through which doors and at what times a key is allowed access.

Each access code has two sets of doors (access levels) both of which may have a time profile attached.

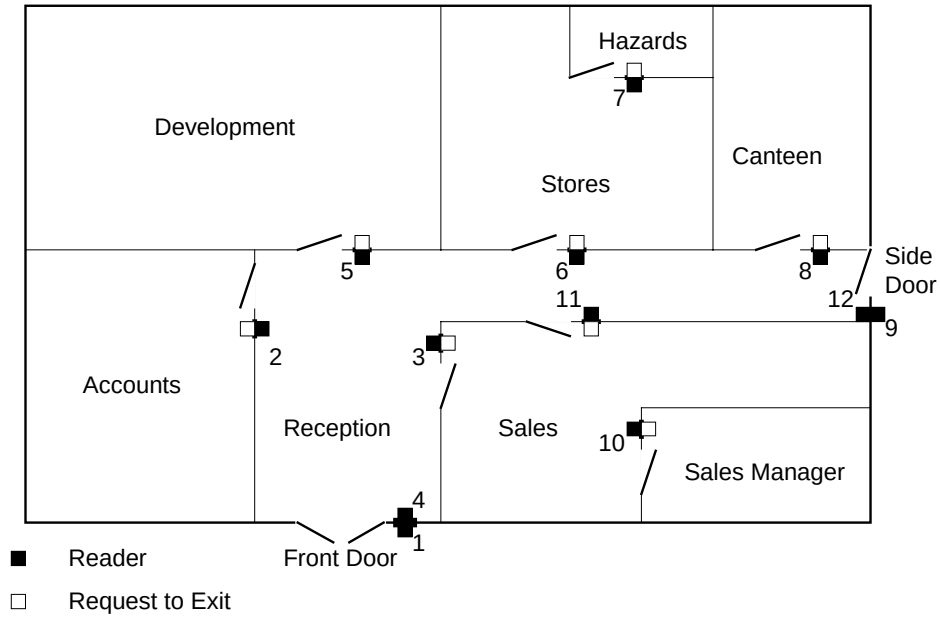
Example

An access code may be set up that allows keyholders through certain doors 24 hours a day, but into other areas only during normal working hours, say 9:00am to 5:00pm, Monday to Friday.

In this case, you will create an access level consisting of all the doors with no time restriction, and another access level containing the doors where access is restricted to working hours. A time profile will then be needed covering the time restriction, in this example 9:00 to 5:00, Monday to Friday.

Figure 6 will be used as a model in several examples.

Figure 6: Sample System Layout



4.2.2 Organizing Access Codes

The best approach to organizing access codes is to consider all the different groups of people who may require access within the system. A group of people for access purposes should consist of those people who will all have the same access requirements. For instance:

The sales department may consist of sales office staff who have access to the sales office, but not the sales manager's office. Other sales office staff will have access to the manager's office. This arrangement therefore requires at least two groups of staff who would be given different access codes.

Cleaners who require access everywhere (except hazards) between 5:00pm and 7:30pm, Monday to Friday.

Senior Managers may require access to all areas at all times.

Development staff may need access to their area at all times but to the rest of the building only during normal working hours.

Residential Systems

Although the examples given concentrate on a commercial type of system, the principles apply equally to residential systems.

Generally speaking, residential systems have less complex access requirements. Residents will usually be given an access code that allows them access to their dwelling only, with no time restriction. Separate access codes will therefore be created for each block or landing, depending on where the readers are located.

Other non-residents will probably need access, for instance, deliveries, cleaners, maintenance etc. either 24 hours a day, or at restricted times.

4.2.3 How to Create Access Codes

To create access codes for a group of people you should follow these steps:

1. Decide which doors the group will be allowed through.
2. Decide at what times they will have access through these doors. If necessary you can have two lists of doors (**access levels**) in one access code, one allowing access on one **Time Profile**, the second allowing access at a different **Time Profile**.
3. Check to see if you already have appropriate access levels and time profiles already set up. If not, create new ones (The **A, PR** and **T** commands).

4.2.4 Access Levels – The AL Command

Very simply, an access level is a list of doors. There is a maximum of 16 doors that may be controlled by the Readykey K2200 system. You use an access level to define which of those 16 doors different people, or groups of people, will be allowed to use.

There are 128 possible access levels that you can set up.

Note:

In a new system, you should find that access level 1 has been automatically set to all doors. That is, an access code which contains access level 1 will allow the keyholder through all the doors in the system.

Before you attempt to use this command, you should be aware of the numbers assigned to each door. In the example above for instance, door 1 is the front door, door 3 is the sales office (from reception), door 11 is the sales office from the corridor, door 4 and door 12 are exit doors.

The table to the right shows which doors are associated with which door controller.

Table 10: Door to Door Controller Association

Door Controller	Door Numbers			
Master	1	2	3*	4*
Slave 2*	5	6	7*	8*
Slave 3*	9	10	11*	12*
Slave 4*	13	14	15*	16*

* Not available on Readykey K1200

In order to show all the settings for 16 doors in each access level, the display has to be split into two halves. You should use the [NXT] and [-] keys to move between the two displays

To create or alter an access level

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [A][L] and press [ENT].

   ```
   CMD AL_
   ```

5. What you see displayed are the first 8 doors of access level 1. The 1 in the center of the display indicates this is the first half of the display (doors 1-8).

   ```
   L 1  1 12345678
   ```

   Press [NXT] to see the second set of 8 doors.
6. The 2 indicates this is the second set of 8 doors (9-16). In this example, access level 1 allows access through all the possible doors in the system.

   ```
   L 1  2 12345678
   ```

   Use the up and down arrow keys to select the access level you want to change.
7. Once you have selected the access level you want to change, you select or deselect doors by typing the numbers 1-8. If a door is selected, its number will appear on the list; if it is deselected, a dash (-) will replace the number.

   ```
   L 17 1 12----78
   ```

   Press [ENT] to save any changes you have made. Press [NXT] to see the second set of 8 doors (9-16). Press [ENT] again to save any changes you have made to the second set.

   ```
   L 17 2 ----56--
   ```

   The example shows an access level (number 17) that allows keyholders through doors 1, 2, 7, 8, 13 and 14
8. Select another access level to change or press [ESC] to return to the CMD prompt.

4.2.5 Time Profiles

Note:

Time profiles are used to control several features of the system as well as controlling keyholder access. They are fully described in Section 4.3 Time Profiles.

There are up to 128 time profiles available within the system. It is recommended that you set up individual time profiles specifically for controlling keyholder access. For instance, you may have a time profile that automatically unlocks the front door between 9:00am and 5:00pm, Monday to Friday, for public access. You may be tempted to use the same time profile when limiting access of keyholders to an area for the same time period. However, if in the future you decide to alter the keyholder access times, you would also alter the door opening times.

Note:

If you have no intention of placing time restrictions on keyholder access, there is no need to use time profiles at all. If no time profiles are used, keyholders will be allowed 24 hour, 7 day access through doors that their access code allows

4.2.6 Access Codes – The AC Command

Access codes are used to combine **where** a person has access (access levels) and **when** (time profiles).

Each code has a primary access level and time profile plus a secondary access level and time profile. (Set in the AL command). This allows access to be given to one set of doors at one time, and another set of doors at another time. If no time profiles are assigned, the keyholders will have access at all times.

Table 11: Access Level Examples

The simplest example allows keyholders with this code access everywhere at all times. In a system that has just been initialized, this is the case for access code 1.	Primary Access Level: Primary Time Profile: Secondary Access Level: Secondary Time Profile:	1 0 0 0	Access Level 1:	12345678 12345678
The next example allows keyholders through the front and side doors at all times, but only into the sales office, accounts and the canteen between 8:30am and 6:00pm Mon-Fri, 8:30am and 1:00pm Sat.	Primary Access Level: Primary Time Profile: Secondary Access Level: Secondary Time Profile:	7 0 8 3	Access Level 7: Access Level 8: Time Profile 3:	1--4---- 1--4---- -23----8 --3----- 08:30-18:00 MTWTF—H 08:30-13:00 -----S-H
This example may be used to allow cleaners access early in the morning.	Primary Access Level: Primary Time Profile: Secondary Access Level: Secondary Time Profile:	9 5 0 0	Access Level 9: Time Profile 5:	123456-8 1234---- 07:00-09:30 MTWTF--H
The Stores Manager needs access to the building and Stores, but is only allowed into other areas during office hours.	Primary Access Level: Primary Time Profile: Secondary Access Level: Secondary Time Profile:	11 0 12 3	Access Level 11: Access Level 12: Time Profile 3	1--4-678 1--4---- 12345678 1-34---- 08:30-18:00 MTWTF—H 08:30-13:00 -----S-H

Note:

*Quite often access levels or time profiles will overlap. For instance, the primary access level may not allow access, but the secondary access level will. In these cases, if **either** access level allows the keyholder access, the door will open.*

Using the AC Command

To set access codes use the **AC** command. At this point, you should know what access levels are set and what time profiles, if any, you are going to use.

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [A][C] and press [ENT].

```
CMD AC_
```

5. What you see displayed is the Primary access level for access code 1.

```
AC 1    PAL  1
```

Use the up and down arrow keys or **FastFind** (*) to select the access code you want to change.

6. Primary Access Level- Once you have selected the access code you want to use, type the primary access level (0-128) and press [ENT].

```
AC 3    PTP  0
```

Press [NXT] to go to the next field.

7. Primary Time Profile - Enter the time profile you want to apply to the primary access level. If you want no time restriction, enter 0. Press [ENT].

```
AC 3    PTP  0
```

Press [NXT] to go to the next field.

8. Secondary Access Level- Type the secondary access level (0-128) and press [ENT].

```
AC 3    PTP  0
```

Press [NXT] to go to the next field.

9. Secondary Time Profile - Enter the time profile you want to apply to the secondary access level. If you want no time restriction, enter 0. Press [ENT].

```
AC 3    PTP  0
```

Press [NXT] to go to the next field.

4.2.7 Holidays – The HR and HP Commands

The door controllers allow the setting up of 24 different holiday profiles. Each holiday profile consists of up to 20 holiday periods, a holiday period being a start date and duration. Up to 254 holiday periods can be defined on a standalone system.

Once a holiday period been defined, it can be applied to any keyholder using the **E** command (see *Section 4.1.4 Editing Keys – The E Command*). When a holiday profile is active, any keyholder assigned the holiday profile will not gain access and a `No Access: Holiday` event will be recorded.

System Holidays

Holiday profile 1 is a special case. It contains all the holiday periods that can be used to override time profiles. This means that, for instance a door that automatically opens during office hours, Monday to Friday, will **not** open on holidays that may fall during the week, such as public holidays, Christmas Day. Likewise, a person allowed into a building during the week can be prevented from gaining access on such days.

For this reason, you should refrain from using holiday profile 1 for keyholder use and reserve it for system holiday use only.

One technique for maintaining system holidays is to assign holiday periods 1 to 20 to holiday profile 1. Assign known dates and durations to those holiday periods. Once a year, you should enter all the known holidays for the following year or so. Using this method you only need to replace holiday periods that have passed with future holidays.

Holiday Periods – The HR Command

There are 24 possible holiday periods. Each consists of a start date and duration**.** The duration includes the start date itself. For instance, if you want a holiday period to cover Christmas Eve and Christmas Day, you would enter a start date of 12/24/00 and a duration of 2 days. For example, if you want just a single day, enter the start date 12/25/00 and duration 1 day.

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [H][R] and press [ENT].

```
CMD HR_
```

5. At this display,

```
ST 1   00-00-00
```

Use the up and down arrow keys or **FastFind** (*) to select the holiday period you want to change

6. **Holiday Period Start Date** - Once you have selected the holiday period you want to use, type the start date. The cursor will 'jump' over the separator characters as you enter the date.

```
ST 5   00-00-00
```

Press [ENT].

Press [NXT] to go to the next field.

7. Holiday Period Duration - Enter the numbers of days the period will last.

```
DURATION 1    0
```

Press [ENT].

Press [ESC] to return to the CMD prompt.

Holiday Profiles – The HP Command

Up to 20 holiday periods can be assigned to a holiday profile. A total of 24 holiday profiles are available. Holiday profile1 has a special purpose, see *System Holidays.*

Using the HP Command

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [H][P] and press [ENT].

```
CMD HP_
```

5. Use the up and down arrow keys or **FastFind** (*) to select the holiday profile you want to change.

```
HOL 1  ON/OFF N
```

6. **Holiday Profile Active** - Type [Y] to make the profile active, [N] to deactivate it. If you deactivate an active profile, any restrictions that were in force will be removed.

```
HOL 1  ON/OFF N
```

Press [ENT]

Press **[NXT]** to go to the next field.

7. **Holiday Period** - Enter the holiday period and press [ENT].

There are 20 fields that you can enter here, press [NXT] to go to the next period.

```
HOL 1  ON/OFF N
```

Press [ESC] to return to the CMD prompt.

4.3 Time Profiles

Time profiles are a powerful tool that have several functions within the access control system:

- Restricting the access of personnel as part of their access code.
- Automatically locking and unlocking doors.
- Automatically enabling an additional alarm point (alarm module).
- Automatically switching a relay on the door controller or an alarm module relay.
- Switching a PIN reader between key plus PIN and key only.

Examples

1. A public access door through which anybody can pass between 9:00am and 5:00pm, Monday to Friday, but outside these hours a key is required.
2. Some staff are only allowed access between 8:30am and 5:30pm, Monday to Friday; 8:30am to 12:00pm Saturday.
3. Cleaners are allowed access only between 7:00am and 9:00am Monday to Saturday.
4. Shift workers can gain access between 8:00pm and 6:00am Monday to Friday.

Note:

If you are never going to use time controls of any type, there is no need to set up any time profiles at all, just use a time profile of 0 where required.

4.3.1 How Time Profiles Work

There are 128 different time profiles. Each time profile consists of up to three time periods. A time period consists of a start time, an end time and the days of the week to which it applies. For instance, example 1 requires just one time period, 9:00am (start time) to 5:00pm (end time), Monday to Friday (days of the week); example 2 requires two time periods, 8:30am to 5:30pm Monday to Friday plus 8:30am to 12:00pm Saturday only.

You can define up to 32 different time periods, and up to three of these time periods can be used to create one of 128 time profiles. A time period may appear in more than one time profile.

The time profile is active from the beginning of the first minute of each time period until the end of the final minute of each time period on the days of the week to which it applies. In addition, if the holiday option is set for a time profile, the time profile will not be active on any days contained in holiday profile 1.

The following table describes the effect that a time profile has when applied to the functions it may control.

Table 12: Time Profile Effect

Function	Command	Profile Active	Profile Inactive
Access Code	AC	Access allowed	No Access
Doors	D	Door unlocked, free access.	Door locked, key required
Alarm Module Inputs	MR	Disabled, no event when activated.	Enabled, alarm event when activated.
Relay Outputs	RE	Relay is set	Relay is not set
PIN Reader	D	Key only required.	Key plus PIN required

Use different time profiles for different functions even if they are identical. This means that if a change is required to one function at a later date, these can be achieved without affecting the other functions.

When using time profiles, it is important to check the time and date at regular intervals, say once a month, to ensure that the system operates accurately. See How to Check and Set the Time.

Note 1:

A time period always finishes at the end of the final minute. That is when the time changes from 5:00pm to 5:01pm

Note 2:

A time period cannot cross midnight. When, as in example 4, it is necessary to cover such a time, two time periods are required, one from the start time up to midnight (use 23:59), with another time period from midnight (use 00:00) to the end time. See the example below.

4.3.2 Examples

Note:

Time periods are defined using the 24-hour clock, where, for example, midnight is 00:00, noon is 12:00 and six o'clock in the evening is 18:00.

The examples given here are typical of the types of applications for which a time profile is used. All the example time profiles are set up by using the following time periods

Table 13: Time Period Examples

	Start Time	End Time	Days
1	08:45	17:30	MTWTF--H
2	08:45	13:30	-----S-H
3	18:00	23:59	MTWTF--H
4	00:00	06:00	-TWTFS--
5	00:00	00:00	--------
6	00:00	00:00	--------
7	09:00	17:00	MTWTF--H
8	00:00	23:59	-----SS-

1. A group of people requires access to an area during working hours only. In this case working hours are 9:00am to 5:00pm Monday to Friday and 9:00am to 1:00pm Saturday. They will not be allowed access on public holidays if these fall on weekdays. Notice that some extra time is allowed at the start and end of the period to allow people to arrive early and leave late.

	Period			
1:	1	08:45	17:30	MTWTF--H
2:	2	08:45	13:30	-----S-H
3:	0			

2. A public entrance door needs to be unlocked during office hours, but not on public holidays. Unlike the example 1, there is no 'spare' time at the start and end of the period.

	Period			
1:	7	09:00	12:00	MTWTF--H
2:	0			
3:	0			

3. Shift workers need access to an area between 6:00pm and 6:00am Monday to Friday.

	Period			
1:	3	18:00	23:59	MTWTF---
2:	4	00:00	06:00	-TWTFS--
3:	0			

Note:

In this case, because they work over midnight, they need access on the following day, i.e. they arrive for work on Friday evening but leave on Saturday morning. You need to use caution when restricting access on public holidays in these cases. A 'normal' working day may start or finish on a holiday.

4.3.3 The PR Command

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [P][R] and press [ENT].

```
CMD PR_
```

5. Use the up and down arrow keys or FastFind (*) to select the time period you want to change.

```
P1  START 00-00
```

6. **Period Start** - Using the 24-hour clock, enter the start time of the period and press [ENT].

```
P1  START 00-00
```

Press [NXT] to go to the next field.

7. **Days of the Week** - This is an option field. To make the time period active on a particular day of the week, type a number as follows:

1 Mon, 2 Tue, 3 Wed, 4 Thu, 5 Fri, 6 Sat, 7 Sun, 8 Hol

```
P1  --------
```

When you press a number, the initial letter of the day will appear. To deselect a day press its number again, a dash will appear at that day.

The holiday option 8 indicates that this time period will **not** be active on a system holiday.

Press [ESC] to return to the CMD prompt.

4.3.4 Creating a Time Profile – The T Command

Before creating a time profile, ensure that the time periods you require have already been set, see *Section 4.3.3 The PR Command.*

Using the T Command

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [T] and press [ENT].

```
CMD T_
```

5. Use the up and down arrow keys or FastFind (*) to select the time profile you want to change.

```
TP 1    ON    Y
```

6. **Time Profile Status** - See the description in see *Section 4.3.1 How Time Profiles Work*, to understand the significance of this setting.

```
TP 1    ON    N
```

Type [Y] to switch the time profile ON, Type [N] to switch the time profile OFF.

Press [ENT].

Press [NXT] to go to the next field.

7. **First Time Period** - Enter the first time period number (0-32). Enter [0] if you do not need this time period.

Press [ENT].

```
TP 1    PER 1  0
```

Press [NXT] to go to the next field.

8. **Second Time Period** - Enter the second time period number (0-32). Enter [0] if you do not need this time period.

Press [ENT].

```
TP 1    PER 2  0
```

Press [NXT] to go to the next field.

9. **Third Time Period** - Enter the third time period number (0-32). Enter [0] if you do not need this time period.
   Press [ENT].

   ```
   TP 1    PER 3  0
   ```

   Press [ESC] to return to the CMD prompt.

4.4 System Administration

4.4.1 Changing the Date and Time – The C Command

Once set at installation, the door controller will maintain its time using a battery backed real-time clock. You should check the clock regularly to ensure accuracy. This is particularly important if you use time profiles for controlling system functions and access.

Summertime (or Daylight Saving Time)

You will need to adjust the clock twice a year when the clocks go back (Autumn) and forward (Spring).

How to Check and Set the Time

To check the date and time use the **C** Command:

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [C] and press [ENT].

   ```
   CMD C_
   ```

5. Type the new date over the existing date, or use the left and right arrow keys to move the cursor to the figures you want to change.

   ```
   DATE    10-11-93
   ```

   If you press [CLR], you should re-enter the time with a space between the hours and minutes.

Note:

The cursor moves over the separator character (-) to the next digit.

Press [ENT] when complete.

If the date you enter is invalid, it will be adjusted to the nearest valid date.

Press [NXT] to go to the next field.

6. Type MON, TUE, WED, THU, FRI, SAT or SUN and press [ENT].

   ```
   ENTER DAY    TUE
   ```

   If you do not type one of the above 3-character names, the display will default to MON.

   Press [NXT] to go to the next field.

7. Type the new time over the existing time, or use the left and right arrow keys to move the cursor to the figures you want to change.

   ```
   ENTER TIME 16-01
   ```

Note:

The cursor moves over the separator character (-) to the next digit.

If you press [CLR], you should re-enter the time with a space between the hours and minutes.

Press [ENT] when complete.

If the time you enter is invalid, it will be adjusted to the nearest valid time.

8. Press [ESC] to return to the CMD prompt.

4.4.2 Manual Lock/Unlock – The L Command

It is possible to manually lock and unlock a door from the master controller. It may be necessary to do this, for instance when a door needs to be kept open while contractors are working in an area or equipment is being moved around. Also, a door normally unlocked on a time profile may need to be locked while a receptionist or guard is not available.

Manual lock will lock the door. Keys will then be required to gain access. If no further action is taken, the door will still unlock at its next automatic opening time.

If the door is manually unlocked, it will lock at its next automatic closing time.

Note:

The door will remain unlocked unless another action is performed. (Automatic lock or manual lock).

Using the L Command

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [L] and press [ENT].

   ```
   CMD L_
   ```

5. You now see displayed the state of door 1. N (Normal) means that no manual override is in operation - the door IS locked.

   ```
   DOOR 1  STATE  N
   ```

   To select the door you want locked or unlocked, you can either use the up and down arrow keys to select an access level, or press the FastFind (*).

   If you use FastFind type the door number you require and press ENT.

   ```
   FIND _
   ```

6. Once you have selected the door you require:

   ```
   DOOR 10 STATE  N
   ```

   Type [L] and press [ENT] to lock the door.

   Type [U] and press [ENT] to unlock the door.

7. Press [ESC] to return to the CMD prompt.

5.0 Displays, Alarms, and Printing

Each controller with a faceplate displays information about the status of doors and communications. The master controller will, in addition, show information such as alarms reports and communication errors between the master and any slave controllers.

This section describes the various displays and also covers the printing options which are available. The section is split into the following sections:

- **Normal Operation**. This describes what to expect on the display when the system is operating normally.
- **Alarms**. This describes the how alarms are handled by the controller and includes **Accepting Alarms**, **Uncleared Alarms**, and so on
- **Communication Errors**. This describes the various communication errors that can occur.
- **Other System Messages**. This provides a description of other displays that may appear on the front panel.
- **Printing**. This describes the printing options available and includes details of the various reports that can be printed.

5.1 Normal Operation

The following displays show what to expect when the system is operating normally, with no errors or alarms.

5.1.1 Master Controller

The display will be blank when no doors are open and everything is operating normally.

5.1.2 Slave Controller

A number, the address of the door controller (2, 3 or 4), will flash at the right of the display. This indicates that the slave controller is being 'polled' by the master.

5.1.3 Master and Slave

This display indicates one or more doors being unlocked on the door controller. This may be due to:

- A valid key being presented to a reader.
- A **Request to Exit button** being pressed.
- The door being automatically open due to a time profile.
- The door being opened by a Manual Unlock command.

Examples

5.2 Alarms

The door controller is capable of reporting several types of alarm condition. These are described below along with the screen display and printer transaction.

All alarm conditions, wherever they occur, are reported at the master controller. If communications are broken between a slave and the master, the slave itself will report the alarm. When communications are restored, the alarm will be transferred to the master - **even if the alarm was accepted at the slave.**

When a printer is attached, you will have a record of the alarm along with its time, date and location. When the alarm condition clears, another report will be generated with the date and time of the event.

5.2.1 Accepted Alarms

All alarm conditions must be accepted at the master. This is done by presenting an editor key to the faceplate reader. All editor keys will accept alarms. The printer, if attached, will show the date, time and identity of the editor that accepted the alarm.

5.2.2 Alarm Activations

Below are shown examples of alarm activations. In each case, the display shown will appear indicating the type of alarm and its location. At the same time a pulsing beep will be generated. The display and beep will continue until the alarm is accepted by an editor key.

If more than one alarm occurs, the next alarm will appear on the display only once the first is cleared. All alarms however will be printed as they occur.

Unauthorized Access / Anti-Tamper Alarm

A door has opened (may be 2 readers/door) without a key being presented or a **Request to Exit** button pressed.

Anti-Tamper Alarm A reader cable has been cut or a reader has been removed.

Printer

Shown below is the alarm, the alarm cleared and acceptance report for unauthorized access and anti-tamper.

Figure 7: Unauthorized Access/Anit-Tamper Alarms

```
11/11/93  16:27  FRONT DOOR                  Unauthorized Access
11/11/93  16:27  FRONT DOOR                  Alarm Cleared
11/11/93  16:28  FRONT DOOR    MASTER KEY    Local Alarm Accepted

11/11/93  16:34  FRONT DOOR                  Anti-tamper Alarm
11/11/93  16:35  FRONT DOOR                  Alarm Cleared
11/11/93  16:36  FRONT DOOR    MASTER KEY    Local Alarm Accepted
```

Door Controller Override

A door controller override input has been activated. This causes all the doors on the door controller to open.

D/C 1 OVERRIDE

Printer

Shown below is the alarm, alarm cleared and acceptance report.

Figure 8: Door Controller Override Alarm

```
11/11/93  14:18  DOOR CTRLR 1              Override Alarm
11/11/93  14:18  DOOR CTRLR 1              Override Alarm Reset
11/11/93  14:18  DOOR CTRLR 1 MASTER KEY   Local Override Accept
```

Zone Alarm

An alarm module input has been activated.

IP 001 ACTIVE

Printer

Shown below is the alarm, alarm cleared and acceptance report.

Figure 9: Zone Alarm

```
11/11/93  17:24  ZONE   1                 Alarm Zone Active
11/11/93  17:24  ZONE   1                 Zone Restored, ReArmed
11/11/93  17:24  ZONE   1    MASTER KEY    Local Alarm Accepted
```

Duress Alarm

A PIN Reader Duress alarm. A key holder has gained entry using a PIN reader, but has entered their duress code (normal PIN +1).

DURESS 02 ALARM

Printer

Shown below is the alarm and acceptance report.

Figure 10: Duress Alarm

```
11/11/93  16:17  SALES OFFICE SMITH AB      PIN Reader Duress Alarm
11/11/93  16:17  SALES OFFICE MASTER KEY    Local Duress Accepted
```

Case Tamper

A door controller cabinet has been opened.

DC 1 TAMPER

Printer

Shown below is the alarm, alarm cleared and acceptance report.

Figure 11: Case Tamper Alarm

```
11/11/93  17:49  DOOR CTRLR 1              Anti-tamper Alarm
11/11/93  17:50  DOOR CTRLR 1              Alarm Cleared
11/11/93  17:50  DOOR CTRLR 1 MASTER KEY   Local Alarm Accepted
```

Alarm Module Tamper

An alarm module case has been opened.

MODULE 01 ALARM

Printer

Shown below is the alarm, alarm cleared and acceptance report.

Figure 12: Alarm Module Tamper Alarm

```
11/11/93  14:16  Alarm Module 01           Anti-tamper Alarm
11/11/93  14:16  Alarm Module 01           Alarm Cleared
11/11/93  14:16  Alarm Module MASTER KEY   Local Alarm Accepted
```

5.2.3 Uncleared Alarms

Once one or more alarms have been accepted, the door controller will display the status of any uncleared alarms. Also shown will be the states of any Alarm Module inputs.

```
CHn- d iiiiiiii
```

Table 14: : Display Key

Variable	Description	Options	
CHn	The reader channel number	n =	1-4
d	Door state	= A	alarm condition
		= 0	door left open
		= C	closed
I	Alarm Inputs	= —	not used
		= I	isolated (manual or auto)
		= A	active
		= N	normal

5.2.4 Communication Errors

When a master controller has one or more slave controllers attached, there is always the possibility of a break in communications. If this occurs, the master door controller will report this on its display.

If there is more than one error, that is more than one slave door controller is not communicating, each message will be displayed in turn for about 5 seconds.

Comms Error 1

A comms error 1 indicates that the master door controller is trying to communicate with a slave but is getting no response.

```
D/C 2  ERROR-1
```

This may be because:

- The slave is not powered.
- The address of the slave is not set correctly.
- The cable between the master and slave is broken or disconnected.

Comms Error 2

```
D/C 2  ERROR-2
```

These errors indicate corrupt replies from a slave door controller are corrupt. This may indicate poor wiring, or strong interference.

Comms Error 3

```
D/C 2  ERROR-3
```

These errors indicate corrupt replies from a slave door controller are corrupt. This may indicate poor wiring, or strong interference.

5.3 Other System Messages

Other displays that you may see on the faceplate display are:

5.3.1 Update Progress

If changes are made that affect a slave door controller, these will automatically be sent. However if a large number of changes are made or the slave is not connected, the changes will be stored. This display indicates how many updates are currently stored for each door controller. Once the door controller communications are restored you should see the number decrease to 0.

```
D/C 2 UPDATE-01
```

5.3.2 Download Progress

You will see this message on the screen when you leave the editor after initiating a download to all the slave door controllers. It indicates the progress of the download, in this example 26.9%. The download will be complete when it reaches 100%.

```
DOWNLOAD  26-9
```

5.4 Using the Printer

Far more information about the system can be obtained if you have a printer attached to your master door controller. Full details for connecting a printer are included in *Readykey K2200 Series Controllers Installation Guide (Bosch P/N: 46513, PAC P/N: 17375)*.

5.4.1 Setting up the Printer

The recommended type of printer is a dot-matrix printer using continuous (fan-fold with sprocket holes) printer paper. You should consult the documentation supplied with your printer for full details on its correct operation. If you have problems printing properly, make sure of the following:

- Make sure that the printer is plugged in, switched on and 'on-line'.
- For neatness, make sure the printer's 'top of form' is set. Do this by manually setting the paper so that the next line will print just below the perforation. Either press a **Top of Form** button or switch off the printer for 10 seconds.
- Ensure that the paper feeds into and out of the printer with no obstructions. Be particularly careful that power and signal cables do not obstruct the paper.
- Switch off the printer when it is left unattended for a long time, for instance overnight or

weekends. All unprinted events will be printed when the printer is switched on again.

5.4.2 On-Line Transaction Printing

If the printer is connected to the master door controller and is powered and 'on-line', each event should be printed as it happens. This will result in a permanent record of all events that occur on the system. The master door controller will store about 2500 events in its non-volatile memory. These events can be recalled over a chosen date range using the **P5** command (see *P5 – Transaction Printout*).

If the printer is not connected or switched off for a period of time, all the unprinted events will be stored. When the printer is connected again, these events will be printed.

No events will be printed while you are in **Editor** mode. They will all be printed when you leave **Editor** mode, but see *Section 5.4.3 High-Priority Events*.

5.4.3 High-Priority Events

Some events, alarms, alarm acceptance, etc. are considered high priority events by each door controller. These will always be reported before any low priority events. This will not be noticed if the printer is permanently connected and reporting events as they happen. If, however, the printer is reconnected after a period of time, all the high priority events will be printed first. This will result in the events appearing on the printer, apparently in the wrong order.

This effect will also be observed if any high priority events occur while you are in Editor mode.

5.4.4 Printing Reports

Nine different reports can be produced from within **Editor** mode. These include a list of keyholders, past events, and system status. Full details of these reports can be found in see *Section 5.5 Printer Reports*.

5.5 Printer Reports

There are several reports that can be printed. These include a list of keyholders, most of the data stored in the system, past transactions and system status. These reports are produced by entering one of the printer commands, **P1** to **P9**. The **P6** command, which prints installation details, is only available to the holder of the master key.

5.5.1 Print Report – The P1 to P9 Commands

Most of these reports allow you to select a range to print, such as personnel numbers, date range for transactions, etc. Each report that requires a range prompts for a `From` and `To` value. In all cases, the default values are the top and bottom of the list, e.g. 1 and 4000 for personnel, 1 and 128 for time profiles. Where a range is required, you start the printout with the **FastFind** button (•).

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type one of the following commands from *Table 15* and press [ENT].

```
CMD L_
```

Table 15: Print Report Commands

Command	Description
P1	Personnel
P2	Door Data
P3	Access Codes
P4	System Status
P5	Transactions
P6	System Set up
P7	Alarm Data
P8	Time Profiles
P9	Holiday Profiles

The P2, P4 and P6 commands will start printing immediately; for other commands, see below.

5. The commands P1, P3, P7 P8 and P9 ask for a FROM and TO parameter.

```
PRINT FROM  1
```

```
PRINT TO 4000
```

(P1 – Personnel)

The default values are FROM 1, and TO the highest value (P1: 4000, P3:128, P7: 128, P8: 32, P9: 24).

Press [ENT].

Press [NXT] to go to the TO field.

Press FastFind (*) at any point to accept the entered values and start the report.

6. **P5 – Transactions** - asks for a start date and time plus an end date and time. The defaults are the earliest possible date and time and the current date and time.

```
STRT DT 00-00-00
```

```
STRT TIME  00-00
```

```
END DT  11-11-93
```

```
END TIME   17-13
```

Use [NXT] to enter any other date and time as the report range.

Press [ENT] after making any changes.

Press FastFind (*) at any point to accept the entered values and start the report.

7. **Printing** - If the printer is connected, a scrolling display will appear indicating that the report is being printed.

```
*PRINTING PERSON
```

Press [ESC] at any time to abort the printout.

Note:

The personnel (P1) may appear to spend a long time showing this display but not printing. This is because it examines all 4000 possible keyholders for valid entries, unless the upper limit is reduced

8. **Failure to Print** - If the printer is not connected or out of paper, you may get this message, plus a short beep.

```
PRINTER FAULT
```

Reconnect the printer or fill it with paper and try the command again.

P1 – Personnel

This report produces a list of all keyholders in the system. The PIN code will only be printer if your editor level allows.

Figure 13: Sample P1 – Personnel Printout

```
Readykey K2200     PERSONNEL REPORT
   DATE: 11-11-93   TIME: 16:53  REQUESTED BY MASTER KEY       PAGE 1

PERS. ID        NAME           TOKEN CODE   ACCESS CODE   PIN NO
0001         MASTER KEY         D3062425        1          1609
0002         JONES A            8824A474        1          5613
0003         SMITH J            3A33642A        1          3446
0004         BROWN IM           C824B4BC        3          8249
0005         BAXTER OT          5503E480        3          4854
0006         TAYLOR TB          8C25D403        3          1524
0007         ROYLE TS           6903F4F4        3          9099
0008         LEE SA             230314F3        3          9030
0009         LIDDY BP           C824942B        3          2941
0010         BORRELL LA         4E02C491        3          5435
0011         WALKER STM         74665451        3          6736
```

P2 – Door Data

All 16 possible doors are printed.

Figure 14: Sample P2 – Personnel Printout

```
Readykey K2200     DOOR DATA REPORT
   DATE: 11-11-93   TIME: 17:32  REQUESTED BY MASTER KEY       PAGE 1

DOOR NO   DOOR NAME   RELEASE TIME  OPEN TIME   TIME PROFILE  LOCK MODE PIN TP

01       FRONT DR IN       7           15           1       1---5---     0

02       ACCOUNTS          5           15           0       1-----7-     1

03       SALES RECEP       5           15           0       1-------     0

04       FRONT DR OUT      0           0            0       --------     0

05       DEVELOPMENT       5           15           0       1-------     0

06       STORES            5           15           0       1-------     0

07       HAZARDS           5           15           0       1-------     0

08       CANTEEN           5           15           0       1-------     0

09       SIDE DR IN        5           15           0       1-------     0

10       SALES MNGR        5           15           0       1-------     0

11       SALES CORR        5           15           0       1-------     0

12       SIDE DR OUT       0           0            0       --------     0

13       DOOR   13         5           0            0       --------     0

14       DOOR   14         5           0            0       --------     0

15       DOOR   15         5           0            0       --------     0

16       DOOR   16         5           0            0       --------     0
```

P3 – Access Data

This report lists all the access codes, broken down into the primary access level and time profile, and secondary access level and time profile.

Figure 15: Sample P3 – Access Data Printout

```
Readykey K2200     ACCESS DATA REPORT
   DATE: 11-11-93   TIME: 10:21  REQUESTED BY MASTER KEY       PAGE 1

ACC CODE  DOORS ACCESSED       TIME PROFILE        TIME PERIODS
001       1-12          Primary   :  000    Period - not assigned
                                               Period - not assigned
                                             Period - not assigned
                        Secondary :  000    Period - not assigned
                                             Period - not assigned
                                             Period - not assigned

002       1,4,8,9,12     Primary   :  001    Period 01 08-45 - 17-30 on  MTWTF--H
                                               Period 02 08-45 - 13-00 on  -----SSH
                                               Period - not assigned
                               Secondary :  000    Period - not assigned
                                               Period - not assigned
                                               Period - not assigned

003       1-12                 Primary   :  001    Period 01 08-45 - 17-30 on  MTWTF--H
                                               Period 02 08-45 - 13-00 on  -----SSH
                                               Period - not assigned
          3,11                 Secondary :  001    Period 01 08-45 - 17-30 on  MTWTF--H
                                               Period 02 08-45 - 13-00 on  -----SSH
                                               Period - not assigned
```

P4 – System Status

This report shows the state of doors and alarm zones within the system. The doors and alarm zones are shown for each door controller in turn.

Table 16: System Status – Doors and Alarm Zones

	System Parameter	Display Message	Description
Doors	Door States	UNLOCKED	Door is manually or automatically unlocked, see Override
		LOCKED	The door requires a valid key
		OPEN	The door is physically open
	Door Alarm States	NO ALARM	No alarm conditions present
		TAMPER/FORCED	A Tamper or Unauthorized Access
		LEFT OPEN	Door left open
	Emergency Override?	YES	If doors all doors opened,
		NO	Normal condition.
	Manual Override?	NORMAL	No override active
		UNLOCK	Door manually unlocked (L Command)
		LOCKED	Door manually locked (L Command)
	Timed Override?	YES	Door opened on a time profile
		NO	No active time profile
Alarm Zone States - Only alarm module Inputs that have been assigned responses are shown.			
	Isolated?	YES	Isolated, either manually or by a time profile
		NO	Zone is active
	State	CLEAR	Input is in its normal condition
		ALARM	Input is in alarm state

Figure 16: Sample P4 - System Status Printout

```
Readykey K2200     DOOR AND ALARM STATUS REPORT
   DATE: 11-11-93   TIME: 10:24  REQUESTED BY MASTER KEY       PAGE 1


DOOR CONTROLLER : 01

DOOR  DOOR NAME    STATE          ALARM STATE    EMERGENCY    MANUAL       TIMED
                                                 OVERRIDE?    OVERRIDE?    OVERRIDE?

01    FRONT DR IN  UNLOCKED       NO ALARM       NO           NORMAL       YES
02    ACCOUNTS     OPEN           FORCED/TAMPER  NO           NORMAL       NO
03    SALES RECEP  LOCKED         NO ALARM       NO           NORMAL       NO
04    FRONT DR OUT UNLOCKED       NO ALARM       NO           NORMAL       NO

ALARM ZONE STATUS

ZONE NO            ISOLATED?          STATE

1                  YES                INPUT CLEAR
2                  YES                INPUT CLEAR
```

P5 – Transaction Printout

The **P5** command prompts you for a date and time range.

Note:

The printout will give all the high priority transactions that have occurred in the date range first, followed by the rest of the transactions. This may result in a pause between the two parts of the report.

Figure 17: Sample P5 - Transaction Printout

```
Readykey K2200     TRANSACTION REPRINT
   DATE: 11-11-93   TIME: 13:09  REQUESTED BY MASTER KEY       PAGE 1

         DATE     TIME     DOOR          USER      TRANSACTION

       11/11/93  09:14  SALES RECEP                Anti-tamper Alarm
       11/11/93  09:14  SALES RECEP  MASTER KEY    Local Alarm Accepted
       11/11/93  09:14  SALES RECEP                Alarm Cleared
       11/11/93  09:15  SALES RECEP                Door Left Open
       11/11/93  09:15  SALES RECEP                Door Closed
       11/11/93  09:15  SALES RECEP  MASTER KEY    Manual Unlock
       11/11/93  09:16  SALES RECEP  MASTER KEY    Manual Lock
       11/11/93  09:27  ZONE   1                   Alarm Zone Active
       11/11/93  09:27  ZONE   1     MASTER KEY    Local Alarm Accepted
       11/11/93  09:28  ZONE   1                   Zone Restored, ReArmed

       11/11/93  09:00  FRONT DR IN                Automatic Unlock
       11/11/93  09:00  ZONE   1                   Auto Zone Disable
       11/11/93  09:00  ZONE   2                   Auto Zone Disable
       11/11/93  09:11               MASTER KEY    Editor On (Panel)
       11/11/93  09:12  SALES RECEP  BAXTER OT     Access Authorized
       11/11/93  09:13  SALES RECEP                Request to Exit
       11/11/93  09:14  SALES RECEP       ????     No Access: Unknown ID
       11/11/93  09:14  FRONT DR IN  BORRELL LA    Access Authorized
       11/11/93  09:15  SALES RECEP  TAYLOR TB     Access Authorized
       11/11/93  09:15  SALES RECEP                Request to Exit
       11/11/93  09:15  ACCOUNTS     TAYLOR TB     Access Authorized
       11/11/93  09:15  SALES RECEP  ROYLE TS      Access Authorized
       11/11/93  09:15  SALES RECEP                Request to Exit
```

P6 – System Setup

This command is only available to the master key.

This report shows information created by using the **Installation** (**INST**), **Data Protection** (**DP**), **Door Controller** (**DC**) and **Editors** (**I**) commands.

This report contains sensitive information, such as passwords, etc. Take care not to leave it in view or where it can found by unauthorized persons.

Figure 18: Sample P6 - System Set Up Printout

```
Readykey K2200     SYSTEM SETUP REPORT
   DATE: 11-11-93   TIME: 15:42  REQUESTED BY MASTER KEY       PAGE 1


BAUD RATE    : 4800
HEADER       : Readykey K2200     (enabled)
PRINTER TYPE : EPSON compatible
POLL TABLE   : ---
DATE TYPE    : D-M-Y format
ID type      : Alphanumeric
ADDRESS      : 1

DATA PROTECTION SETUP
     TRANS ENABLED    : Y
     POSITIVE ENABLED : Y
     TIME PROFILE     : 0
     EXCLUDED DOORS   :


ADDRESS           TYPE           DOORS       PASSBACK CODE  PASSBACK TIME  READER/LOCK
 MASTER        Readykey K2200         01 02 03 04       ---              00            1-
 02            Readykey 2000N        05 06 07 08       ---              00            --
 03            Readykey 2000N        09 10 11 12       ---              00            --
 04            Readykey 2000N        13 14 15 16       ---              00            --

EDITOR NO.     EDITOR NAME    EDITOR LEVEL   TOKEN CODE     EDITOR PASSWORD

MASTER         MASTER KEY                    D3062425
1              JOE SMITH          4095       8824A474       JOES
2              FRED BROWN         1271       3A33642A       FREDDY
```

P7 – Alarm Data

This report gives details of alarm inputs and responses, as defined by the MR and MS commands.

Figure 19: Sample P7 - Alarm Data Printout

```
Readykey K2200     ALARM SETUP REPORT
   DATE: 11-11-93   TIME: 13:44  REQUESTED BY MASTER KEY       PAGE 1

ZONE   RESPONSE    ACTIVE    PROFILE       RELAYS
1         1          YES        0           4
2         1          YES        0           0
```

P8 – Time Profiles

Each time profile is printed along with the its Status and the time periods assigned.

Figure 20: Sample P8 - Time Profile Printout

```
Readykey K2200     TIME PROFILE REPORT
   DATE: 11-11-93   TIME: 16:01  REQUESTED BY MASTER KEY       PAGE 1

PROFILE   ACTIVE    PROFILE DETAILS
1         YES       Period 01   08:45  -  17:30 on  MTWTF--H
                    Period 02   08:45  -  13:00 on  -----SSH
                    Period - not assigned

2         NO        Period 03   18:00  :  23:59 on  MTWTF---
                    Period 04   00:00  -  06:00 on  -TWTFS--
                    Period - not assigned
```

P9 – Holiday Profiles

Holiday profiles are printed with all the assigned holiday periods. Holiday profile 1 contains the system holidays.

Figure 21: Sample P9 - Holiday Profile Printout

```
Readykey K2200     HOLIDAY REPORT
   DATE: 30-11-93   TIME: 16:05  REQUESTED BY MASTER KEY       PAGE 1

PROFILE   ACTIVE  START    DURATION START    DURATION  START    DURATION  START    DURATION
1         YES     25/12/93    2    01/01/94    1    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
2         NO      00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
```

5.5.2 Header – The HE Command

Two features are provided, the header text that appears at the top of each page and whether or not a new page is started and a header printed at the end of each page of on-line transactions.

Header Text

The text that appears at the top of every report can be changed to reflect the site name or any other suitable text. Up to 30 characters can be entered, which are split into 3 'strings' of 10 characters each.

Header used in On-line Tranactions

When on-line transactions are printed they will normally print continuously without interruption. You can, however, set the transactions to leave a gap at the end of each page and print the header at the top of the next page.

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [H][E] and press [ENT].

   ```
   CMD HE_
   ```

5. **Header Text 1** - Type the first 10 characters of the header text. Press [ENT].

   ```
   STR1  Readykey
   INTERN
   ```

   Press [NXT] to go to the second 10 characters.
6. **Header Text 2** - Type the second 10 characters of the header text. Press [ENT].

   ```
   STR2  ATIONAL PA
   ```

   Press [NXT] to go to the final 10 characters.
7. **Header Text 3** - Type the final 10 characters of the header text. Press [ENT]

   ```
   STR3  C 2244
   ```

   Press [NXT] to go to the next field.
8. Enable Header in On-Line Transactions

```
HEADER ENABLE N
```

Type [Y] for on-line transactions to start a new page and print the header. Press [ENT].

Type [N] for continuous transaction printing, without break. Press [ENT].

Press [ESC] to go back to CMD prompt.

6.0 Installer Commands

This section describes the commands used to configure the door controller. Care should be taken when using these commands as they can change the way the whole system works. Only users and Installers who are fully aware of the implications of making changes to the system should have access to these commands. Ideally they should be used only by the installer when commissioning the system.

6.1 The D Command

The D command allows the setting of several features on each door or reader. Each of these features is described in detail below, followed by a description of the **D** command itself.

The features are described in the order in which they appear, and the heading for each command also includes the prompt displayed when using the **D** command.

When a door controller is first installed, if the **SYSTEM START** command is used (see *Master Key Commands*), some values will already be set. These will be indicated in the descriptions below.

6.1.1 Lock Release Time

Prompt:	LRT
Range:	0 – 255 seconds
Default:	5

The amount of time, in seconds, that a lock will operate when a valid key is presented or a Request to Exit button is pressed. When setting this value, consideration should be given to the way in which the door operates, its location and the people who will be using it. For instance, elderly or disabled people may require a longer time to open the door after presenting their keys.

Note:

If door monitoring is enabled, the lock release time will be cancelled when the door controller detects the door has closed.

6.1.2 Door Open Time

Prompt:	DOT
Range:	0 – 255 seconds
Default:	0

The value entered here performs two functions, enabling door monitoring and the length of time a door can be left open before a warning.

6.1.3 Door Monitoring

The fitting of a door monitoring switch is described in *Readykey K2200 Series Controllers Installation Guide (Bosch P/N: 46513, PAC P/N: 17375).*

- If the value is non-zero (i.e. between 1 and 255), door monitoring is enabled. This means that the door controller expects a switch to open when the door is opened and to close when the door is closed.
- If no door monitoring switch is fitted, this value should be set to 0.
- If a door monitoring switch is fitted and this value is set to 0 and the switch will be ignored.
- If no door contact is fitted but you wish to monitor the reader and its cable for tamper events, a non-zero value should be entered here. The DR1 terminal of the reader channel must also be connected to ground at the reader.

Once door monitoring is enabled, the door controller will respond to alarm events and warnings. These are:

- **Unauthorized Access** The door has opened without a valid key being presented or a **Request to Exit** switch being pressed. This event must be accepted by an editor key.
- **Anti-Tamper** The cable between the door controller and reader has been broken. This event must be accepted by an editor key.
- **Door Left Open** A warning event generated when a door is left open for a period longer than the lock release time **plus** the door open time.

6.1.4 Time Profile

Prompt:	TP
Range:	0 – 128
Default:	0

See *Section 4.3 Time Profiles* for details on creating time profiles.

A time profile can be used to automatically lock and unlock a door at set times of the day and days of the week. A typical example would be a public access door that is unlocked during office hours to allow non-keyholders to enter but requires a key at all other times. The time profile could also prevent unlocking on public holidays, such as Christmas, etc.

If you have no intention of automatically unlocking a door, set the value to 0.

The value entered is the number of the time profile that will control automatic locking and unlocking. It is recommended that time profiles used for controlling doors are not used for any other purpose. This allows changes to be made to door control, without inadvertently disturbing other time controlled functions, such as access codes, alarm zones, etc.

`Automatic Lock` and `Automatic Unlock` transactions are generated on each occasion.

- If a value of `0` is used, a key will be required at all times.
- If a time profile is disabled, the door it is assigned to will lock (if it is unlocked) and a key will be required at all times until the time profile is enabled again.

Mode 1

Prompt:	`M`
Range:	8 options
Default:	All unset

This option field controls 8 different settings controlling the operation of the reader and lock. They are:

Table 17: Reader and Lock Operation Settings – Mode 1

Option	Type	Description
1	Lock Type	**Unset:** Power to unlock, fail-secure Power to lock, fail-safe If you using a power to lock (or fail-safe) locking device, this option should be set. In this case, power will be provided continuously and removed to release the lock. If unset, power will be provided to operate the lock
2	Emergency Override/Free Exit	**Unset:** Normal Operation **Set:** Emergency Override/Free Exit The operation of this option is described in detail in the *Readykey K2200 Series Controllers Installation Guide* (Bosch P/N: 46513, PAC P/N: 17375). When **unset** the DR1 inputs operate normally: **DR1** the door contact switch, if fitted, monitors the door position **DR2** the Request to Exit switch When this option is **set**, the operation of the DR1 and DR2 inputs is altered: **DR1** the door contact switch, produces a Free Exit transaction. It may also operate as a Request to Exit switch, in that if it is opened the lock will also operate. A door open time must be set to allow this feature to operate. Door left open reports will also be generated if it is used as a door monitoring switch. **DR2** when opened produces an `Emergency Override On` transaction, when closed produces an `Emergency Override Off` transaction. This allows the monitoring of an emergency switch such as a break-glass.
3	Request for Entry	**Unset:** Normal Operation **Set:** Request for Entry When set, a Request to Exit switch will produce a Request for Entry transaction. This is a useful feature, for instance, when the switch is operated from inside an area to unlock a door once a person outside has been recognized. This may the case when using audio or video entry systems.
4	Readykey AVR (Automatic Vehicle Recognition)	**Unset:** No AVR attached **Set:** AVR Only set this option when a Readykey AVR reader module is attached to the reader channel.
5	Readykey Alarm Module/Readykey Alarm Event Manager	**Unset:** No Readykey Alarm Module/Readykey Alarm Event Manager attached. **Set:** Readykey Alarm Module/Readykey Alarm Event Manager Only set this option when an alarm module is fitted to the reader channel. If you set this option when an alarm module is not attached the reader LED will flicker. You cannot have both option 7 (PIN reader with time profiles) and a Readykey Alarm Module set on the same channel.
6	Exit Out of Hours	**Unset** Normal Operation **Set** Exit Out Of Hours

Table 17: Reader and Lock Operation Settings – Mode 1

Option	Type	Description
		When set, this option allows people to use a door when their time profile has expired. This would normally be the case for an exit door, where people would be locked in they failed to leave before their time profile expired. An `Exit out of Hours` report is generated when set.
7	PIN Reader with Time Profiles	**Unset** No Readykey PIN reader with time profiles fitted **Set** Readykey PIN reader with time profiles fitted. Only use this option if a Readykey PIN reader with time profiles is fitted to the reader channel. Do not set this option if any other type of PIN reader is fitted. You cannot have both option 5 (alarm module) and a PIN reader with time profiles set on the same channel.
8	Not Used	Leave Unset

Mode 2

Prompt:	`M2`
Range:	8 options
Default:	All unset

This option field controls an additional 8 different settings of which only three are currently used, controlling the operation of the reader and lock. They are:

Table 18: Reader and Lock Operation Settings - Mode 2

Option	Type	Description
1	Request to Exit Without Lock Activation	**Unset** RTE with Lock Output (normal operation) **Set** E with no Lock Output This option is designed for use on the secure side of a door where exit is via a handle etc. Pressing the Request to Exit switch simply informs the system that someone has left the area
2	Lock as Soon as Possible	**Unset** Lock release time operates normally **Set** Lock de-activated a maximum of 2 seconds after the door is opened.
3	Log on Door Entry Only	**Unset** All events are logged **Set** Events only logged if the door is opened When set, if a key is presented to a door but the door isn't opened, the event will not be logged.
4 - 8	Not currently used.	

6.1.5 Door Name

Prompt:	`ID`
Default:	`DOOR n` n = 1 to 16

Use this field to give the door a useful name. This name, which may contain up to 12 letters (A-Z), numbers (0-9) and spaces (SPC), will appear on all printed reports.

6.1.6 PIN Reader Time Profile

Prompt:	`PINTP`
Range:	0 – 128
Default:	0

A PIN reader with time profiles provides two levels of security. When the time profile is active, a valid key alone will allow access, when the time profile is inactive, a valid key **plus** the correct PIN is required. If a time profile of 0 is used, a valid key plus PIN will always be required.

An example may be a door that only requires a key during normal office hours but requires a key plus PIN at any other time.

6.1.7 Using the D Command

Each of the settings in the D command is fully described above.

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [D] and press [ENT].

   ```
   CMD D_
   ```

5. Use the up and down arrow keys to select the door.

   Enter a value, in seconds, between 0 and 255 for the amount of time the lock will operate. Press [ENT].

   ```
   DR 1    LRT  5
   ```

   Press [NXT] to go to the next field.
6. A value greater than zero enables door monitoring. The value entered is the time in seconds that, when added to the lock release time, a door left open warning will be generated. Press [ENT]

   ```
   DR 1    TP   0
   ```

   Press [NXT] to go to the next field.
7. **Lock Mode Options** - This is an option field. To change a setting press the number corresponding to the option you want to change. If an option is set, its number will be displayed, if not set, a - (dash) will be displayed.

Table 19: Lock Mode Options

Option	Description	
1	**Unset**	Fail-secure lock
	Set	Fail-safe lock
2	**Unset**	Normal RTE, door contact
	Set	Emergency override, free exit
3	**Unset**	Normal RTE report
	Set	Request for entry report
4	**Unset**	No AVR module
	Set	AVR module attached
5	**Unset**	No alarm module
	Set	Alarm module attached
6	**Unset**	Normal operation
	Set	Exit out of hours allowed
7	**Unset**	No PIN reader with time profiles
	Set	PIN reader with time profiles attached
8	Not Used, leave Unset	

Press [ENT] when all required options are set.

Press [NXT] to go to the next field.

8. **Door 1, Lock Mode 2 (Options)** - This display consists of 8 more option settings represented either by a number or a - (dash). Each setting is changed by pressing a number between 1 and 8. When set, the number will appear: when not set, a - (dash) will replace the number. At startup, all settings will be off.

   ```
   DR 1  M2--------
   ```

Table 20: Lock Mode 2 Options

Options	Description	
1	**Set:**	RTE with no lock output. This is designed for use on the secure side of a door where exit is via a mechanical handle, etc. Pressing the Request to Exit switch shunts the door contact but does not activate the lock.
	Unset:	RTE with lock output. This is the default setting. When the Request to Exit switch is pressed, the lock state is changed and the door can be opened.
2	**Set:**	Early lock release time. When set, the lock is de-activated a maximum of two seconds after the door is opened.
	Unset:	lock release time operates normally
	Lock is de-activated when the lock release time expires or the door closes.	
3	**Set:**	Log authorized event only when door opened. When set, authorized events are only reported if the door is opened.
	Unset:	All events are logged whether or not the door is opened
4	**Elevator Control:**	**This option is not user configurable and is set using Readykey for Windows**
5 – 8	**These settings are not currently used.**	

Press [NXT] to go to the next field. (Remember to press [ENT] to save changes).

9. **PIN Reader Time Profile** - Only used when a Readykey PIN reader with time profiles is attached. When the time profile is active, only a valid key is required; when inactive, a valid key plus PIN is required for access. A time profile of 0 requires a valid key plus PIN at all times. Press [ENT].

   ```
   DR 1  PINTP  0
   ```

Press [ESC] to return to the CMD prompt.

6.2 Alarm Event Manager and Relay Outputs

6.2.1 Overview

The Alarm Event Manager is an optional alarm module that can be attached to any reader channel. It can be attached at any point in the cable between the door controller and reader. The alarm module has 8 inputs and 8 relay outputs **but relays 5 to 8 can only administrated by Readykey for Windows**.

8 Monitored Inputs

Each alarm module can monitor up to 8 inputs and generate an alarm if any enabled input is activated.

Each input may be:

- Normally Open or Normally Closed (set on the module itself)
- Enabled/Disabled Manually
- Enabled/Disabled using a time profile
- Programmed to activate a relay.

8 Relay Outputs

The 8 relay outputs on the module may be activated by:

- An monitored input being activated.
- A system event.
- A time profile.

6.2.2 Identiying Modules, Inputs and Relays

Each reader channel on a door controller may have an alarm module connected. This means a maximum of 16 modules per system (four on each door controller, although only two on a Readykey K1200).

Each alarm module has 8 possible inputs. These are numbered 1 to 8 on each alarm module. When reporting, however, the zone number, 1 to 128, is used. The zone number is as shown in the following table.

Table 21: Zone Number

Location	Zone Numbers							
	Input Number:							
	1	2	3	4	5	6	7	8
Door Controller 1								
Alarm Module 1	1	2	3	4	5	6	7	8
Alarm Module 2	9	10	11	12	13	14	15	16
Alarm Module 3 *	17	18	19	20	21	22	23	24
Alarm Module 4 *	25	26	27	28	29	30	31	32
Door Controller 2								
Alarm Module 5	33	34	35	36	37	38	39	40
Alarm Module 6	41	42	43	44	45	46	47	48
Alarm Module 7 *	49	50	51	52	53	54	55	56
Alarm Module 8 *	57	58	59	60	61	62	63	64
Door Controller 3								
Alarm Module 9	65	66	67	68	69	70	71	72
Alarm Module 10	73	74	75	76	77	78	79	80
Alarm Module 11 *	81	82	83	84	85	86	87	88
Alarm Module 12 *	89	90	91	92	93	94	95	96
Door Controller 4								
Alarm Module 13	97	98	99	100	101	102	103	104
Alarm Module 14	105	106	107	108	109	110	111	112
Alarm Module 15 *	113	114	115	116	117	118	119	120
Alarm Module 16 *	121	122	123	124	125	126	127	128

** Not available on Readykey K1200*

On a standalone system, each alarm module has 4 usable relay outputs, giving a maximum number of 16 on each door controller, or 64 on the whole system (assuming all door controllers are Readykey K2200s.) In addition, the 4 relays on each door controller can be programmed in the same way as an alarm module relay but only if reader channel 4 **does not** have an alarm module connected.

6.2.3 Alarm Module Relays

There are three ways an output relay may be activated:

- By a monitored input being activated using the **MS** command (see *Alarm Module Sensors*).
  Each monitored input may be programmed to activate a relay on any alarm module connected to the same door controller.
- By a system event using the **RE** command (see *Section 6.2.5 Relay Programming*).
  System events include `Unauthorized Access`, `Door Left Open`, `Door Open`, etc.
- By a time profile using the **RE** command (see *Section 6.2.5 Relay Programming*).
  Each relay can be activated by a time profile.

Door Controller Relays

The 8 relays on each door controller each have a default action. The relays will operate according to these defaults, unless programmed to do otherwise.

Table 22: Relay Defaults

Relay	Description
1	Activated by invalid access on door 1
2	Activated by invalid access on door 2
3	Activated by invalid access on door 3
4	Activated by invalid access on door 4
5	Activated by an `Unauthorized Access` or `Anti-Tamper` alarms at any door on the door controller.
6	Activated by time profile 1
7	Activated by a `Door Left Open` event at any door.
8	Activated by `Case Tamper (T+, T-)` alarm.

Door controller relays are programmed as if they were on alarm module 4, therefore you cannot program relays on the door controller if an alarm module is present on channel 4 of the door controller.

6.2.4 Alarm Module Programming – The MR and MS Commands

There are three stages to programming an alarm module.

- Indicate the presence of the alarm module on a reader channel by setting option 5 of the lock mode using the **D** command (see *Section 6.1.7 Using the D Command*).
- Define one or more input responses using the **MR** command (see *Alarm Module Responses – The MR Command*). A response consists of two items, a manual switch (see *Alarm Module Responses – The MR Command, Time Profile*) and a time profile (see *Section 4.3 Time Profiles*).
- Assign a response and/or a relay activation to one or more of the alarm module inputs using the **MS** command (see *Alarm Module Sensors*).

Alarm Module Responses – The MR Command

There are 255 possible alarm module responses, each consisting of two items, a manual switch and a time profile. By assigning one response to several alarm inputs, several inputs can be enabled and disabled at once. For instance, if you had 10 fire doors all monitored by alarm module inputs, by assigning the same response they can all be enabled/disabled together. Alternatively if you need to control inputs individually, you should define responses for each input.

Manual Switch

The manual switch allows an operator to manually enable/disable all inputs that are assigned the response.

- Transactions

  Inputs that are enabled manually will produce a `Manual Engage` transaction. Inputs that are disabled manually will produce a `Manual Isolate` transaction.

Time Profile

If a time profile is part or a response, any alarm inputs that are assigned that response will be **disabled** while the time profile is active. For instance, a time profile set to 9:00am to 5:00pm, Monday to Friday, assigned to a response, will disable all inputs with that response between those hours.

For an alarm input to automatically enable/disable with a time profile, it must be manually enabled first.

- Transactions

  Inputs that are enabled automatically will produce an `Auto Zone Enable` transaction. Inputs that are disabled automatically will produce an `Auto Zone Disable` transaction.

Using the MR Command

Use the **MR** command to define alarm module responses. These responses can then be assigned to individual inputs using the **MS** command (see *Alarm Module Sensors*).

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [M][R] and press [ENT].

   ```
   CMD MR_
   ```

5. Use the up and down arrow keys to select a response. There are a maximum of 255 responses.

   Manual Switch

   ```
   REC 1   ON    N
   ```

   Type [Y] to switch on the response. Press [ENT].

   Type [N] to switch off the response. Press [ENT].

Note:

Any points that have been assigned this response will be disabled if you select [N], or enabled if you select [Y].

Press [NXT] to go to the next field.

6. **Time Profile** - Enter the time profile number used to control the response. When the time profile is active, any points assigned this response will be disabled.

   ```
   REC 1   TP    0
   ```

   A time profile of 0 means any points assigned this response will be controlled only by the manual switch. Press [ENT].

   Press [ESC] to return to the CMD prompt..

Alarm Module Sensors

The MS Command: Each alarm module input is enabled by giving it a response number using the **MR** command (see *Alarm Module Responses – The MR Command*) In addition, each input may be programmed to operate a relay on any alarm module **on the same door controller.**

Response Number

By giving one or more inputs the same response number, several points can be controlled together. The number you enter is the record number of the response you create using the MR command.

Alarm Module Relay

Any alarm module relay on the same door controller can be set when a point is activated. The number you enter is the number of the relay according to the table.

Table 23: Relay Numbers

Module Location	Relays			
Channel 1	1	2	3	4
Channel 2	5	6	7	8
Channel 3*	9	10	11	12
Channel 4*	13	14	15	n/a

** Not available on Readykey K1200 door controllers*

Note:

The fourth relay on alarm module 4 is not available for alarm input activation

Using the MS Command

Use the MS command to assign responses to alarm module inputs. Each record contains responses for all 8 inputs on each alarm module.

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [M][S] and press [ENT].

   ```
   CMD MS_
   ```

5. Use the up and down arrow keys to select an alarm module. There are a maximum of 16 alarm modules.
6. **Input 1 Response Number** - Enter the response number for this input. If you enter [0], the input will not be monitored at all. Press [ENT].

   ```
   DR 1  IP 1 R 0
   ```

   Press [NXT] to go to the next field.
7. **Input 1 Module Relay** - Enter a relay number, see the table above, that will be set if the input is activated. Enter [0] for no relay activation. Press [ENT].

   ```
   MODULE RELAY  0
   ```

   Press [NXT] to go to the next field.
8. **Input 2 Response Number** - Enter the response number for this input. If you enter [0], the input will not be monitored at all. Press [ENT].

   ```
   DR 1  IP 2 R 0
   ```

   Press [NXT] to go to the next field.
9. **Input 2 Module Relay** - Enter a relay number, see the table above, that will be set if the input is activated. Enter [0] for no relay activation. Press [ENT].

   ```
   MODULE RELAY  0
   ```

   Press [NXT] to go to the next field.

   Press [ESC] when you have finished.

6.2.5 Relay Programming

- The RE Command: There are two types of relay that can be activated. They are:

- The 4 relays located on each door controller.
- The 4 relays located on each alarm module.

The relays on the alarm modules can be activated by alarm module Inputs as described above, in the MS command. This section describes how to use both these types of relay to respond to other events

There are two types of event to which these relays can respond; system events and time profiles. It is unlikely that you will activate a relay on both a system event and time profile, however, it is possible - the relay will stay set until all conditions are clear.

System Events

The following table shows the types of event and their code number that can be assigned to a relay.

Table 24: Event Types

System Event	Relay Code	Notes:
No Response	0	
Door Alarm on any door	1	An alarm event (i.e. unauthorized access, cable tamper, etc.) at any of the four doors on the door controller will activate a relay given this code. The relay will not be deactivated until all such alarms are cleared. This is the same as the default action given to relay 1 if not programmed otherwise.
Door Left Open on any door	2	This code will activate a relay if any of the four doors on the door controller are left open and it will be deactivated when all the doors are closed. This is the same as the default action given to relay 3 if not programmed otherwise
Case Tamper	3	
Door 1 Open	4	These codes will activate a relay if the particular door is opened for any reason. It will deactivate when the door is closed.
Door 2 Open	5	
Door 3 Open	6	
Door 4 Open	7	
Door 1 Left Open	8	These codes will activate a relay if the particular door is left open and it will deactivate when the door is closed
Door 2 Left Open	9	
Door 3 Left Open	10	
Door 4 Left open	11	
Door 1 Alarm	12	These codes will activate a relay if the particular door has an alarm event, i.e. unauthorized access or cable tamper, and it will deactivate when the alarm is cleared
Door 2 Alarm	13	
Door 3 Alarm	14	
Door 4 Alarm	15	

Time Profiles

A relay can be made to operate with a time profile. When the time profile is active, the relay will be set. Examples are the use of external lighting, switching heating or ventilation systems, etc.

Using the RE Command

There are 16 relay records, one for each alarm module.

To program the door controller relays, select `DR 4`, `DR 8`, `DR 12`, `DR 16` for door controllers 1, 2, 3 and 4 respectively, provided no alarm modules are installed on these channels.

1. Present an editor key to the faceplate reader.
2. Enter the password and press [ENT], if required.
3. You will now see the CMD prompt.
4. Type [R][E] and press [ENT].

   ```
   CMD RE_
   ```

5. **Door 1, Relay 1 Time Profile Number** - Enter a time profile number (1-128). When the time profile is activated, the relay will activate; when the time profile finishes, the relay will deactivate. A time profile of 0 will remove any timed activation.

   ```
   DR 1 RLY 1  TP 0
   ```

   Press the [ENT] key.

   Press [NXT] to go to the next field.
6. **Door 1, Relay 1 System Event** - Enter a system event (0-15) as shown in the table above.

   ```
   DR 1 RLY 1 SYS 0
   ```

   Press the [ENT] key.

   Press [NXT] to go to the next relay.

   There are a total of 4 relays, each with a time profile and system event value.

   Press [ESC] to return to the CMD prompt.

Examples

To have each door controller use its four on-board relays to indicate `Door Left Open` for its own individual doors:

1. Use the **RE** command and select the `DR 4` record for door controller 1.
2. For `RLY1 SYS` enter a value of `4` and press [ENT].
3. For `RLY2 SYS` enter a value of `5` and press [ENT].
4. For `RLY3 SYS` enter a value of `6` and press [ENT].
5. For `RLY4 SYS` enter a value of `7` and press [ENT].

If door 2 is left open relay 2 will activate and stay activated until the door is closed.

7.0 Troubleshooting

This section is designed to help you "troubleshoot" problems that may occur. Once the system has been installed and commissioned, the majority of the problems that are likely to occur will be due to incorrect programming of the system. Any hardware problems that may arise (broken cable, faulty reader, etc.) have already been dealt with in the *Readykey K2200 Series Controllers Installation Guide (Bosch P/N: 46513, PAC P/N: 17375).*

Many common problems involve programming the system. A flowchart is provided for each problem, which takes you through a series of checks that should resolve the problem. The note **"installer**" means that it may be a hardware fault and you should refer to *Readykey K2200 Series Controllers Installation Guide (Bosch P/N: 46513, PAC P/N: 17375).* Where instructions are given (e.g. add access group), refer to the appropriate section of this document for details.

The following problems are covered:

- Key not working - access not allowed through one of the doors in the system.
- No access to Editor mode.
- User cannot add/delete keys etc.

Note:

It is assumed that the system has been commissioned and tested and all installation problems resolved.

7.1 End User Troubleshooting

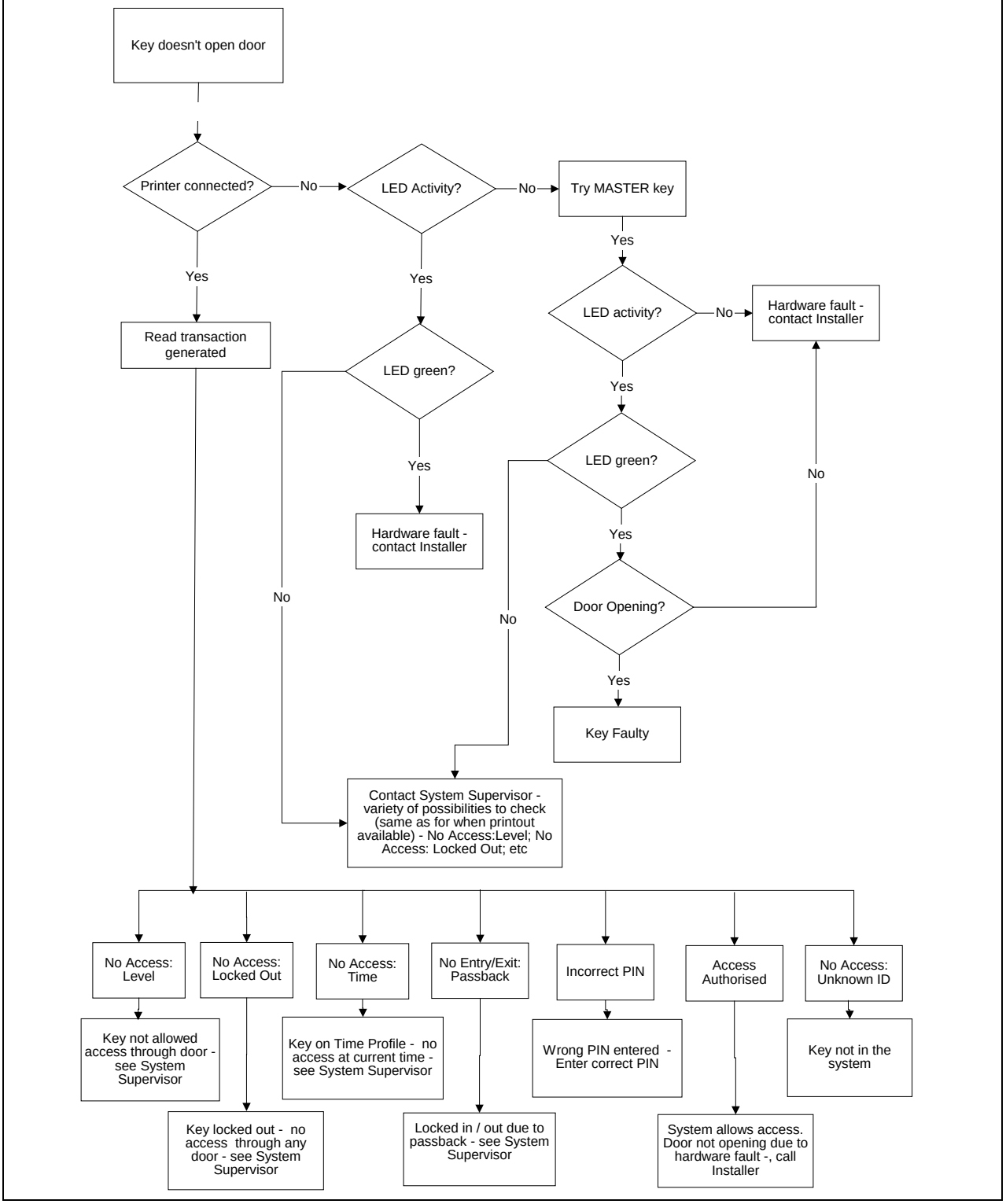
7.1.1 Key Not Working

Note:

This section is primarily for use with standalone systems. Troubleshooting for networked systems is primarily via Readykey for Windows. However, for completeness, troubleshooting for the Windows system is also included here

. When a key is presented within range of the reader the LED will flash green momentarily to indicate the code in the key has been read. If the key is valid for that door at that time, the LED will turn green and the lock will operate. The LED will stay green while the lock is released.

Figure 22: Standalone System

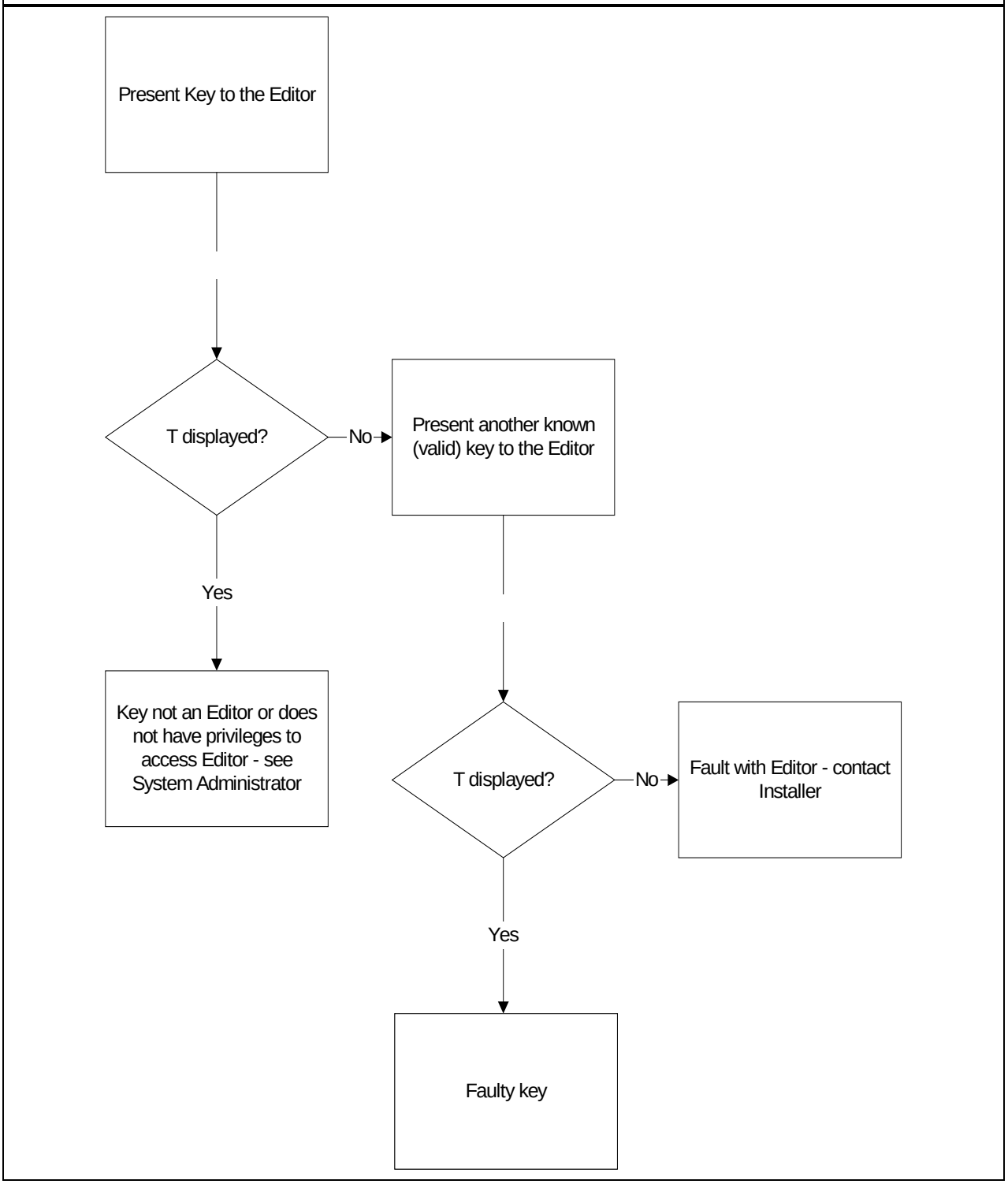

Key doesn't open door
Printer connected?
No
LED Activity?
No
Try MASTER key
Yes
Yes
Yes
LED activity?
No
Hardware fault - contact Installer
Read transaction generated
LED green?
Yes
Yes
LED green?
No
Yes
Hardware fault - contact Installer
No
Door Opening?
No
Yes
Key Faulty
Contact System Supervisor - variety of possibilities to check (same as for when printout available) - No Access:Level; No Access: Locked Out; etc
No Access: Level
No Access: Locked Out
No Access: Time
No Entry/Exit: Passback
Incorrect PIN
Access Authorised
No Access: Unknown ID
Key not allowed access through door - see System Supervisor
Key on Time Profile - no access at current time - see System Supervisor
Wrong PIN entered - Enter correct PIN
Key not in the system
Key locked out - no access through any door - see System Supervisor
Locked in / out due to passback - see System Supervisor
System allows access. Door not opening due to hardware fault -, call Installer

7.1.2 No Access to Editor

This will basically happen if:

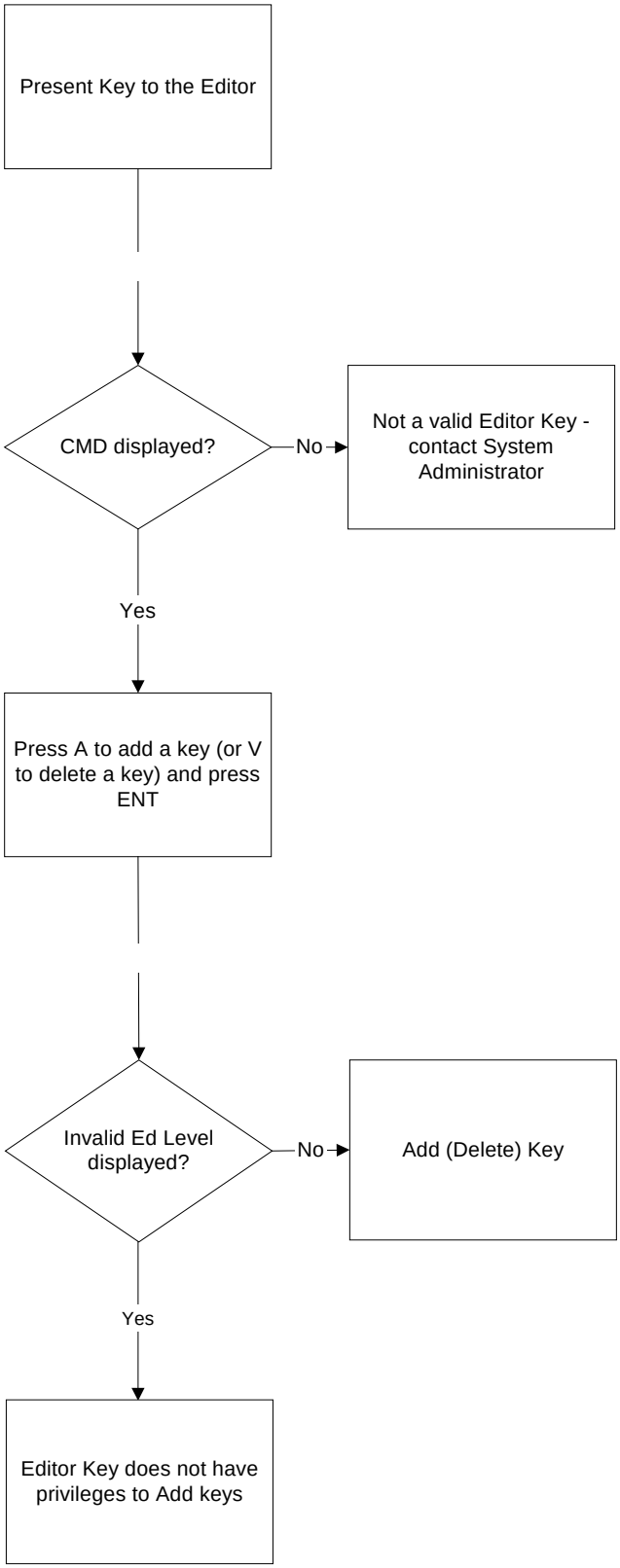
- Key is not an editor key.
- Editor key does not have the required privileges.
- Editor key is faulty.
- Editor is faulty.

Figure 23: No Access to Editor


Present Key to the Editor
T displayed?
No
Present another known (valid) key to the Editor
Yes
Key not an Editor or does not have privileges to access Editor - see System Administrator
T displayed?
No
Fault with Editor - contact Installer
Yes
Faulty key

7.1.3 Cannot Add/Delete Keys

Figure 24: Cannot Add/Delete Keys


Present Key to the Editor
CMD displayed?
No
Not a valid Editor Key - contact System Administrator
Yes
Press A to add a key (or V to delete a key) and press ENT
Invalid Ed Level displayed?
No
Add (Delete) Key
Yes
Editor Key does not have privileges to Add keys

This is for caption text

Appendix A: Transactions

This appendix shows all the transactions generated by the door controllers. Each transaction described shows:

Description - this is the text produced on the printer

Priority- all **high priority** transactions are sent to the printer before any other transactions.

An example of the printed report is also given. Each transaction is preceded by an audit number [in brackets], the date and time.

A.1 List of Transactions

Table 25: Transactions

Transaction	Description	Priority
Access Authorized	A key has been allowed through an access point. This transaction will always be generated unless the access point is set as entry or exit, when those types of transactions will be produced. `[1274] 02/12/93 15:41 DOOR NAME KEYHOLDER Access Authorized`	
Alarm Cleared	A door has been secured after an Unauthorized Access or a reader/cable has been restored after an anti-tamper alarm. `[1268] 02/12/93 15:34 DOOR NAME Alarm Cleared`	
Alarm Zone Active	An alarm module input has activated. `[1235] 02/12/93 15:14 ZONE 2 Alarm Zone Active`	
Anti-Tamper Alarm	A reader has been disconnected or its cable has been broken. `[1263] 02/12/93 15:33 DOOR NAME Anti-tamper Alarm`	

Auto Relay Reset	A relay, either on the door controller (main) or an alarm module (relay number), has been reset by a time profile.
	`[1224] 02/12/93 15:11 DOOR CTRLR 1 MAIN 1 Auto Relay Set`
	`[1231] 02/12/93 15:11 DOOR CTRLR 1 3 Auto Relay Set`	

Auto Zone Disable	An alarm module input has been disabled with a time profile. `[1289] 02/12/93 15:54 ZONE 2 Auto Zone Disable`	
Auto Zone Enable	An alarm module input has been enabled with a time profile. `[1298] 02/12/93 15:55 ZONE 2 Auto Zone Enable`	
Automatic Lock	A door has automatically locked on a time profile. `[1296] 02/12/93 15:55 DOOR NAME Automatic Lock`	
Automatic Unlock	A door has automatically unlocked on a time profile. `[1286] 02/12/93 15:54 DOOR NAME Automatic Unlock`	
Door Closed	A door has been closed after being left open. `[1272] 02/12/93 15:34 DOOR NAME Door Closed`	
Door Left Open	A door has been left open beyond the time allowed following a valid access or REX `[1270] 02/12/93 15:34 DOOR NAME Door Left Open`	high
Door Closed	A door has been closed after being left open. `[1272] 02/12/93 15:34 DOOR NAME Door Closed`	
Editor Off (Panel)	An operator has left the Editor, or it has timed out, at the faceplate. `[1219] 02/12/93 15:02 MASTER KEY Editor Off (Panel)`	

Table 25: Transactions

Transaction	Description	Priority
Editor On (Panel)	An operator has entered the Editor at the faceplate. `[1218] 02/12/93 15:02 MASTER KEY Editor On (Panel)`	
Emergency Override Off	Using a special lock mode option, the request to exit input can be used to monitor an emergency break-glass (manual pull station.) This transaction occurs when the switch is restored. `[1326] 02/12/93 16:10 DOOR NAME Emergency Override Off`	
Emergency Override On	Using a special lock mode option, the request to exit input can be used to monitor an emergency break-glass (manual pull station.) This transaction occurs when the switch is broken. `[1325] 02/12/93 16:10 DOOR NAME Emergency Override On`	
Entry Authorized	A key has been allowed through an access point that was set as an entry point. This would be channel 1 or 2 on a Readykey K2200 or channel 1 on a Readykey K1200. Entry and exit points are only used when Lock Sharing or Passback features are used. `[1321] 02/12/93 16:06 DOOR NAME KEYHOLDER Entry Authorized`	
Exit Authorized	A key has been allowed through an access point that was set as an exit point. This would be channel 3 or 4 on a Readykey K2200 or channel 2 on a Readykey K1200. Entry and exit points are only used when Lock Sharing or Passback features are used. `[1322] 02/12/93 16:06 DOOR NAME KEYHOLDER Exit Authorized`	
Exit Out of Hours	A key has been allowed to pass through an exit door, although a time profile would not normally let the key through. A special lock mode option needs to be set on the door to allow this feature. `[1342] 02/12/93 16:06 DOOR NAME KEYHOLDER Exit Out of Hours`	
Free Exit	This is a special condition where a door contact is fitted but no request to exit button is used. Every time the door opens without a key being used this transaction will be generated. A special lock mode option is required. `[1327] 02/12/93 16:10 DOOR NAME Free Exit`	
Incorrect PIN Entry	A keyholder has made 5 attempts to enter a PIN at a K2001-P reader without success. That key will not be accepted for 2 hours. `[1306] 02/12/93 15:59 DOOR NAME KEYHOLDER Incorrect PIN Entry`	
Local Alarm Accepted	An alarm has been accepted at the door controller by presenting an Editor key. `[1237] 02/12/93 15:14 DOOR NAME MASTER KEY Local Alarm Accepted`	
Local Duress Accepted	A PIN Duress Alarm has been accepted by an operator at the door controller `[1320] 02/12/93 16:03 DOOR NAME MASTER KEY Local Duress Accepted`	
Local Override Accept	An Override Alarm has been accepted by an operator at the door controller. `[1365] 02/12/93 16:20 DOOR CTRLR 1 MASTER KEY Local Override Accept`	
Manual Engage	An alarm module input has been switched on by an operator. `[1359] 02/12/93 16:16 ZONE 2 Manual Engage`	
Manual Isolate	An alarm module input has been disabled by an operator. `[1357] 02/12/93 16:16 ZONE 2 Manual Isolate`	
Manual Lock	An operator has manually locked a door unlocked by a time profile, or previously unlocked manually. `[1343] 02/12/93 16:14 DOOR NAME MASTER KEY Manual Lock`	

Table 25: Transactions

Transaction	Description	Priority
Manual Unlock	An operator has manually unlocked a door (see above.) `[1342] 02/12/93 16:14 DOOR NAME MASTER KEY Manual Unlock`	
No Access: Holiday	A key has been presented, but a holiday period has been assigned to this keyholder's time profile. `[1444] 02/12/93 16:02 DOOR NAME KEYHOLDER No Access: Holiday`	high
No Access: Level	A key has been presented, but the access level assigned to the access code does not include this door. `[1451] 02/12/93 16:03 DOOR NAME KEYHOLDER No Access: Level`	high
No Access: Locked Out	A key has been presented, but it is not been assigned any access code. `[1217] 02/12/93 15:02 DOOR NAME KEYHOLDER No Access: Locked Out`	high
No Access: Time	A key has been presented, but is not allowed through this door at this time. `[1456] 02/12/93 17:04 DOOR NAME KEYHOLDER No Access: Time`	high
No Access: Unknown ID	A key has been presented, but its passcode is unknown to the door controller. `[1362] 02/12/93 16:19 DOOR NAME ???? No Access: Unknown ID`	high
No Entry: Passback	A key has been presented, but will not be allowed through this door until it has left the pass-back area. `[1466] 02/12/93 17:06 DOOR NAME KEYHOLDER No Entry: Pass Back`	high
No Exit: Passback	A key has been presented, but will not be allowed through this door until it has entered the pass-back area. `[1475] 02/12/93 17:08 DOOR NAME KEYHOLDER No Exit: Passback`	high
Override Alarm	An override alarm input has opened all the doors attached to the door controller. `[1363] 02/12/93 16:20 DOOR CTRLR 1 Override Alarm`	high
Override Alarm Reset	The override input has been cleared, all the doors will close again. `[1364] 02/12/93 16:20 DOOR CTRLR 1 Override Alarm Reset`	high
PIN Reader Duress Alarm	A PIN duress code has been entered on a K2001-P(PIN +1) and the door has opened. `[1319] 02/12/93 16:03 DOOR NAME KEYHOLDER PIN Reader Duress Alarm`	high
Power Off	The door controller has had its power removed, or the Reset button has been pressed. `[1222] 02/12/93 15:11 DOOR CTRLR 1 Power Off`	high
Power On	The door controller has been powered up, or the Reset button has been released. `[1223] 02/12/93 15:11 DOOR CTRLR 1 Power On`	high
Repeated Key Use	The same key has been presented continuously to a reader for 5 lock operations and the door has closed. `[1252] 02/12/93 15:20 DOOR NAME KEYHOLDER Repeated Token Use`	
Request for Entry	A special lock mode option can be used to allow a Request for Entry transaction. This may be used when a button is used from inside an area to allow a person access. `[1481] 02/12/93 17:09 DOOR NAME Request for Entry`	
Request to Exit	The Request to Exit switch has been used to open a door. `[1240] 02/12/93 15:19 DOOR NAME Request to Exit`	high
RTE Button Held Down	A Request to Exit button has been continuously operated 5 times and the door has closed `[1246] 02/12/93 15:20 DOOR NAME RTE Button Held Down`	high

Table 25: Transactions

Transaction	Description	Priority
Unauthorized Access	A door has been opened without a key being presented or the Request to Exit being pressed. `[1258] 02/12/93 15:21 DOOR NAME Unauthorized Access`	high
Zone Restored & ReArmed	An alarm module input has been restored, and if reactivated will cause another alarm. `[1239] 02/12/93 15:14 ZONE 2 Zone Restored, ReArmed`	high

A.2 High Priority Transactions

These transactions are always sent to the printer before any other transactions.

- Alarm Cleared
- Alarm Zone Active
- Anti-Tamper Alarm
- Door Closed
- Door Left Open
- Emergency Override Off
- Emergency Override On
- Incorrect PIN Entry
- Local Alarm Accepted
- Local Duress Accepted
- Local Override Accept
- Manual Lock
- Manual Unlock
- No Access: Holiday
- No Access: Level
- No Access: Locked Out
- No Access: Time
- No Access: Unknown ID
- No Entry: Passback
- No Exit: Passback
- Override Alarm
- Override Alarm Reset
- PIN Reader Duress Alarm
- Power Off
- Power On
- Repeated Key Use
- RTE Button Held Down
- Unauthorized Access
- Zone Restored & ReArmed

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